TEESWORKS

DORMAN POINT ENVIRONMENTAL STATEMENT

VOLUME 2: CHAPTER C TRANSPORT

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Dorman Point, South Tees

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Chapter C: Transport

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C1.0 Introduction

C1.1 This Chapter of the Environmental Statement ('ES') has been prepared by Arup on behalf of the applicant, South Tees Development Corporation ('STDC'). It assesses the proposed development described in Chapter B and it considers the effects of the proposed development on the surrounding transport network, including the potential effects of the predicted traffic associated with the proposed development.

C1.2 The baseline situation is considered before the likely environmental effects of the development are identified, both during construction and operational phases of the development. Mitigation measures to reduce any negative environmental effects are identified as appropriate, before the residual environmental effects are assessed.

C1.3 This chapter is supported by the following appendix:

- **Appendix C1**: Transport Assessment (TA);
- **Appendix C2**: Transport Assessment Scoping Note; and
- **Appendix C3**: Consultation Responses.

About the Author

C1.4 The author of this Chapter, Phill Ayres, is a Member of the Chartered Institute of Highways and Transportation (MCIHT) with over eight years' experience in undertaking transport assessments for Environmental Assessments.

C1.5 This technical assessment has been reviewed by Nicola Hill, a Chartered Transport Planning Professional (CTPP) with over 17 years' experience in undertaking transport assessments for Environmental Statements.

C1.6 This assessment has been approved by Steve Wells, an Associate Director at Arup, who is a Chartered Engineer (CEng) and Chartered Environmentalist (CEnv) with 30 years of experience.

C2.0 Policy Context

Introduction

C2.1 The following legislation, regulations and policies have been consulted to inform the assessment of the proposed development with relation to transport impacts during the design development.

National Planning Policy Framework (2019)

C2.2 The National Planning Policy Framework (NPPF) [2] sets out the Government's planning policies for England and how these should be applied. In relation to transport, the NPPF specifies that development sites should ensure that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

C2.3 The NPPF advises that 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.

Tees Valley Combined Authority Strategic Transport Plan 2020-2030

C2.4 The Strategic Transport Plan (STP) [3] presents a package of transport improvements to transform Tees Valley's transport system and identifies the delivery of the South Tees Regeneration (STDC) Master Plan as one of the key actions towards achieving this goal.

C2.5 With regards to transport, the STP identifies the following two core principles for the Teesworks area:

- Use the regeneration opportunity to strengthen transport connections with Redcar town centre and other urban centres, to realise improved economic and community benefits; and
- Deliver efficient connectivity across the South Tees area through enhanced on-site transport infrastructure to realise optimal functionality.

C2.6 Supporting the STP are implementation plans, including the Tees Valley Local Cycling and Walking Implementation Plan (LCWIP). This document provides a framework for the development and promotion of cycling and walking throughout the Tees Valley.

Tees Valley Design Guide and Specification – Residential and Industrial Estates Development (updated 2018)

C2.7 The Design Guide [4] presents the standards for car parking and cycle parking provisions for residential and industrial developments in the Tees Valley area. For industrial developments, the maximum car parking and minimum cycle parking standards are as follows:

- Sufficient operational car parking and area for manoeuvring within the site;
- 1 space per 45m² gross floor area, or 4 spaces per 10 employees (whichever is the greater); and

- Provision for the parking of 2 cycles per 200m² gross floor area.

C2.8 The Design Guide document also specifies the disabled car parking provision and for employment premises it advises that 5% of spaces should be reserved for disabled users.

Redcar and Cleveland Local Plan (2018)

C2.9 The Local Plan [5] identifies the existing transport connectivity of the Teesworks area, which it notes has access to a deep-water port, excellent road and rail links, access to energy and utilities. The Plan is supportive of regenerating the Teesworks area and specifically, in relation to this site and/or transport:

- Policy SD4 relates to the general development principles and includes the requirements for locating development on appropriate sites with compatible surroundings, ensuring development is located in a sustainable and safe location, and ensuring there is adequate infrastructure to serve the development;
- Policy LS4 (South Tees Spatial Strategy) includes the objective to support renewable energy projects and to improve the accessibility of employment sites by a range of transport methods;
- Policy TA1 relates to transport and new development and includes the requirement for new developments to encourage transport choice and non-car modes; and
- Policies TA2 and TA3 relate to improving accessibility by bus across the borough and improving the walking cycling and public rights of way networks respectively.

Redcar and Cleveland Local Transport Plan 2011 – 2021

C2.10 The South Tees area is included in the Local Transport Plan (LTP) [6] as an area to be promoted for major industry, which will help the regeneration of the area and will contribute to the delivery of sustainable, inclusive and cohesive communities.

C2.11 Improving access to existing and proposed employment and regeneration sites throughout the Tees Valley, including the Teesworks area, is one of the key actions within the LTP. In addition, the LTP states that a range of bus services are needed to ensure that the emerging employment opportunities are accessible to everyone, regardless of whether they own a car, and to ensure that developments do not add to congestion on important routes. It does however note that new developments in the Teesworks area are likely to create pressures for vehicle movements on the Strategic Road Network (SRN), particularly at roundabouts on and between the A66, A1053(T), A174(T) and A19(T). These potential pressures will need to be addressed to enable full economic advantage to be taken of the regeneration, but in a manner that does not undermine strategies for the growth of sustainable transport use.

C2.12 The Local Transport Plan has been partially replaced by the Tees Valley Strategic Transport Plan and will be fully replaced when the Local Implementation Plan is adopted in 2021.

Redcar and Cleveland South Tees Area Supplementary Planning Document (2018)

C2.13 One of the key objectives of the Supplementary Planning Document (SPD) [7] is delivering efficient connectivity across the South Tees area through making the best use of existing transport infrastructure, providing new and enhanced on-site transport infrastructure and creating an integrated and safe transport network, which takes account of the needs of a variety of users and includes sustainable travel measures.

C2.14 The SPD specifies that an area wide Transport Strategy for the Teesworks area will include new and enhanced footpath and cycleway networks enabling ease of movement across the industrial park by non-automated transport modes, and development proposals that align with this strategy will be supported. A Transport Strategy is currently being prepared for the wider Teesworks site and it will be used by Teesworks for the effective delivery of development across the site, recognising the opportunities and benefits the single-ownership of the Teesworks area brings to delivering interventions that will further encourage modal shift away from the private car and an increased use of public transport.

South Tees Regeneration Master Plan (2019)

C2.15 The South Tees Regeneration Master Plan [8] stated that ease of access to the site by all travel modes will be an essential component of a successful regeneration, also stressing the need for the site to be equipped with adequate, modern infrastructure for efficiently handling freight imports and exports. The Master Plan also notes that consideration will be given to the impact on the local highway network of the planned major increases in traffic resulting from development within the Teesworks area so that junction capacities are not adversely impacted.

C3.0 Assessment Methodology & Significance Criteria

Assessment Methodology

C3.1 The Environmental Impact Assessment (EIA) has been carried out in accordance with the EIA Regulations [1] and guidance contained in relevant publications including:

1 Environmental Impact Assessment: A Guide to Procedures [9];

2 Guidelines for Environmental Impact Assessment [10]; and

3 Guidance for Travel Plans, Transport Assessments and Statements [11].

C3.2 The methodology used for the assessment of transport impacts is summarised as follows:

1 Consultation with the relevant officers at Redcar and Cleveland Borough Council (RCBC), Middlesbrough Council (MC) and Highways England (HE);

2 Estimate of baseline data (further details in the accompanying TA outlining how the baseline was established in the absence of surveys due to the Covid-19 pandemic and associated lockdown measures – see Appendix C1);

3 Consideration of potential impacts resulting from the operational development;

4 Proposal of any mitigation measures to offset any likely significant impacts in relation to the above; and

5 Assessment of any residual impacts accounting for the implementation of mitigation.

C3.3 The study area that has been used for this assessment, agreed during the TA scoping process is the transport network that may be affected by the proposed development. The extent of the study area is shown in the traffic flow diagrams within Appendix D of the TA - see Appendix C1.

C3.4 In accordance with the IEMA Guidelines, the following conditions on the transport network within the study area have been assessed during the operational phase (2033 with development):

1 Severance (change in traffic flows);

2 Driver and bus user delay (informed by junction capacity assessments);

3 Pedestrian and cyclist amenity (change in traffic flows on local routes used by pedestrians and cyclists); and

4 Accidents and safety (following a review of existing conditions, a judgement has been made as to whether the proposed development will result in any changes to highway safety).

C3.5 The assessment considers change between the Future Baseline and the Future Baseline with the proposed development. As this is an outline planning application the specifics of construction are not known at the time of writing. As such, construction traffic has not been included in the quantitative assessment, however a qualitative assessment has been carried out based on information described in Chapter B of this ES. As set out in Section C5.0 of this Chapter a quantitative assessment will be undertaken based on a series of embedded mitigation measures that are in built into the design of development. Those of relevance are include in the Framework Construction Environmental Management Plan (Framework CEMP) and the Construction Traffic Management Plan (CTMP).

Significance Criteria

C3.6 The classification of a likely effect on transport issues has been derived by considering the magnitude of any forecast change and the sensitivity of the receptor.

C3.7 In terms of transport, the magnitude of change is defined as:

- Negligible – effects which are unlikely to be perceptible to drivers, bus passengers or those walking and cycling;
- Minor – effects which will be slight or very localised;
- Moderate – effects which are likely to be perceptible to drivers, bus passengers or those walking and cycling and may be considered to be significant; and
- Substantial – considerable changes (by extent, duration or magnitude), or of more than local significance, or breaching identified standards or policy.

C3.8 The receptors are the roads that will be used by pedestrians, cyclists, bus passengers, car drivers and freight drivers in the Future Baseline and have been defined as:

- Low – receptors which are lightly used relative to other receptors within the study area, have few direct accesses and have a high capacity to accommodate change;
- Medium – receptors which are used at an average level relative to other receptors within the study area, have direct frontage access and junctions and have a moderate capacity to accommodate change without significant effects arising; and
- High – receptors which are heavily used, would have a low capacity to accommodate change or are part of the SRN.

C3.9 Changes to the transport network have been assessed as having a beneficial or adverse effect, and the significance of the effect has been determined relating to the magnitude of change and the sensitivity of the receptors. The significance criteria are defined as:

- Negligible – effects which are unlikely to be perceptible and within the normal variation of daily traffic flow;
- Minor – effects which will be slight or very localised or only effect receptors that are defined as low sensitivity;
- Moderate – effects which are likely to be perceptible or effect high sensitivity receptors which may be considered to be significant; and
- Substantial – considerable changes (by extent, duration or magnitude), or of more than local significance and/or effect high sensitivity receptors.

C3.10 Note that moderate and substantial beneficial and adverse effects are considered to be 'significant'. All operational effects are considered to be permanent.

C3.11 The assessment of severance takes into account the change in traffic flows, and judgement has been made on the magnitude of change in accordance with IEMA guidance. Changes in traffic of less than 10% are considered to have no discernible environmental effect, given that daily variations in background traffic flow may fluctuate by this amount. A 30% change represents a reasonable threshold above which a change would be perceptible.

C3.12 The IEMA Guidelines note that these driver and bus user delays are only likely to be 'significant' when the traffic in the network surrounding the development is already at, or close to, the capacity of the system.

C3.13 IEMA guidelines recommend pedestrian and cyclist amenity should be assessed where there is a significant increase in HGV flows. A significant change would be where the HGV component of

traffic flow is halved or doubled, and therefore should be assessed if the HGV component of traffic flow increases by 100%.

C3.14 An assessment of accidents and safety takes into account whether there is a proposed change to the highway network or whether proposed development trips could result in any changes to highway safety.

C3.15 An assessment of cumulative effects arising from six sites within the Teesworks area, including the proposed development, South Industrial Zone (known as South Bank), and the four other outline planning applications that are being submitted by STDC (including, Lackenby, The Foundry, Long Acres and Steel House) are assessed within Chapter N of this ES.

C3.16 Residual effects have been identified in C7.0 if they remain after mitigation has been taken into account.

Consultation

C3.17 A Transport Scoping Report (see Appendix B of the TA and Appendix C2 of this ES) for the proposed development was issued on 20 November 2020 to the highway authority for the local road network (RCBC) and HE, who are responsible for the SRN. A copy of the scoping report was also sent to Middlesbrough Council (MC), the neighbouring highway authority.

C3.18 Prior to planning submission, HE and RCBC provided comments on the Transport Assessment Scoping Note and these can be found in Appendix C3. The assessment responds to comments from both consultees.

C3.19 Specifically, HE asked that the study area extends to includes the SRN and that future growth scenarios should match those applied to the South Bank development. Further information about the mode share assumptions is requested, and it is advised that traffic distributions be informed by Census data. The methodology of the Dorman Point assessment for traffic forecasting follows the approach used for South Bank, and Census journey to work data has been analysed to inform trip distributions. The mode share assumptions, and adjustments to car mode share forecasts to account for the provision of a bus service, are outlined in the assessment.

C3.20 RCBC noted that the assessment should set out how pedestrians and cyclists will access the site from first occupation. In addition, RCBC request that further infrastructure for electric vehicles and hydrogen filling stations should be considered. The application is being submitted in outline and therefore these matters cannot be addressed in detailed at this stage. Further information with regards to consultation responses can be found in the Transport Assessment (Appendix C1).

C3.21 Arup will continue to liaise with all parties following submission and throughout the determination of the application.

C3.22 Arup is preparing the Transport Strategy for the wider Teesworks area, within which the proposed development is located. For the strategy development, Arup has held Transport Steering Group workshops (on 4th February and 21st May 2020) with representatives from the highway authorities and Tees Valley Combined Authority (TVCA). At these workshops the discussions have focussed on what stakeholders want to achieve, in terms of transport, as the site is developed, and these discussions have been used to inform the expected future transport conditions when the proposed development is operational.

Assumptions and Limitations

C3.23 Trips by mode have been determined using 2011 census data but reducing car mode by 5% to account for trips transferred onto the proposed bus service that will be delivered to support access to the development. This results in the assumed maximum car mode share for Dorman Point to be 64%. Further details about the bus service are provided in C5.6.

C3.24 Due to current (winter 2020) circumstances with the Covid 19 pandemic and lockdown measures, it has not been possible for traffic surveys to be undertaken to inform the baseline condition assessment.

C3.25 Similarly, a review of existing conditions for pedestrians and cyclists has been based on publicly available imagery such as Google Streetview, and no site visits to inform the assessment were undertaken. The existing baseline scenario was therefore informed by desktop research and gathering existing data only.

C3.26 Given the inability to gather site specific baseline data and visit the site, it should be noted that in preparing the baseline traffic flow forecasts Arup relied on information provided by others and whilst all data was checked, Arup and STDC do not accept responsibility for the accuracy of such information. Arup emphasise that any forward-looking projections, forecasts, or estimates have been based upon interpretations or assessments of available information at the time of production. Actual events frequently do not occur as expected, and the differences may be material. For this reason, Arup and STDC accept no responsibility for the realisation of any projection, forecast, opinion or estimate.

C4.0 Baseline Conditions

Existing Conditions

C4.1 The development site is 57.8ha in size and located in the south-western part of the Teesworks area and lies between the 'Lackenby' area to the east and the South Tees Freight Park. It is immediately north-west of the Bolckow Industrial Estate and is to the south of the South Bank Zone and the Landfill and Waste Management Facilities area as identified in the STDC Master Plan.

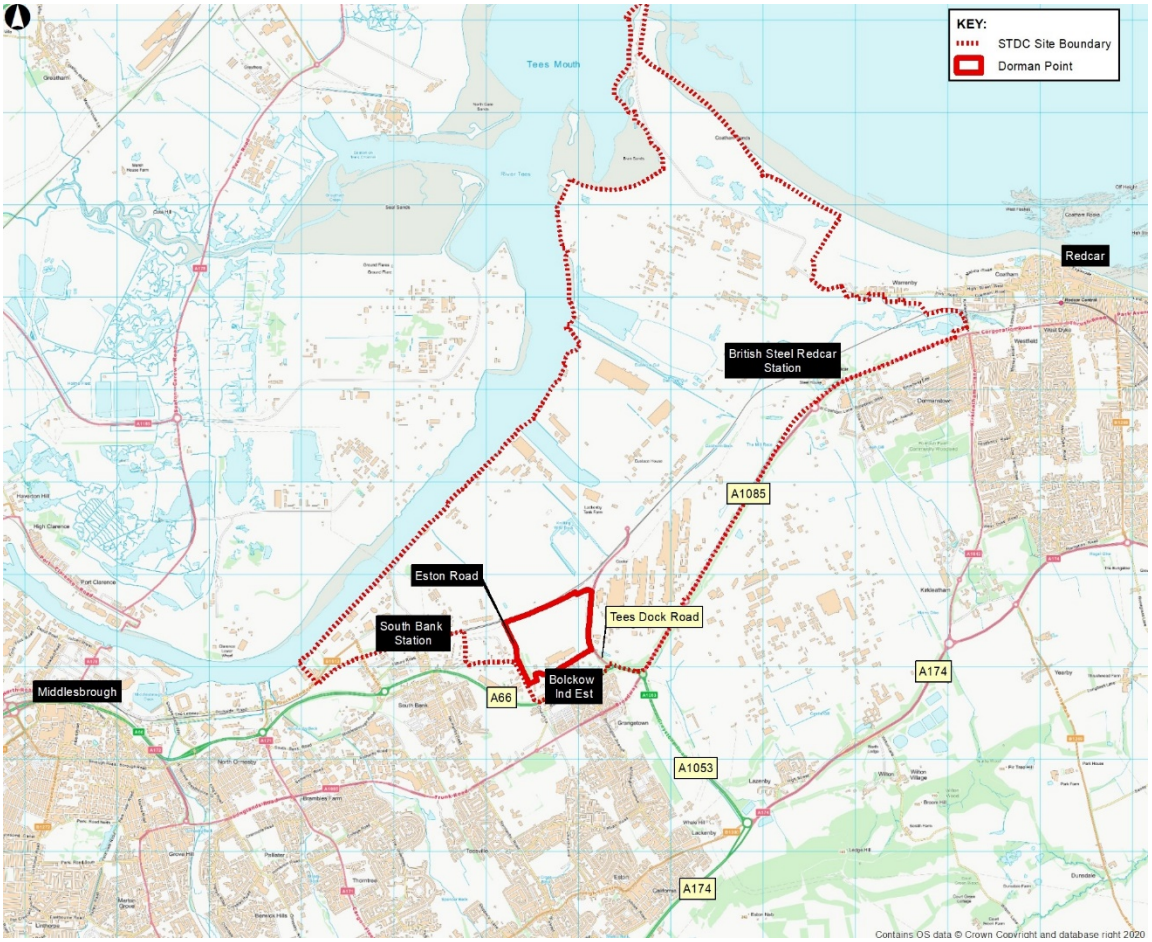
C4.2 The site is immediately bounded by:

- Tees Dock Road to the east;
- Existing development in the Bolckow Industrial Estate to the south-east;
- Eston Road and open vacant industrial land to the west; and
- The Darlington to Saltburn Railway line to the north-west.

C4.3 The site's history includes iron and steel industries and was previously occupied by buildings associated with the Cleveland Iron and Steel Works. The site is therefore well suited to industrial type development.

C4.4 The site's location and its surroundings are shown on Figure C4.1 below.

Figure C4.1 Dorman Point: Site Boundary



Walking and Cycling

C4.5 Walking facilities in the vicinity of the site are currently limited. All roads have footways on at least one side of the carriageway, although that of Tees Dock Road is of poor quality. The Teesdale Way Public Right of Way ('PROW') runs alongside the Darlington to Saltburn Railway line, just within the northern extent of the site.

C4.6 The nearest National Cycle Route (NCR) is NCR1 which runs along Bolckow Road, approximately 400m (linear distance) from the south of the site. NCR1 provides strategic connections between Saltburn, Marske, Redcar and Middlesbrough.

C4.7 On-road local cycle routes are also provided through Eston, Grangetown and South Bank to the south of the site, (on-road signed routes in some locations and advisory routes through quiet streets in other locations).

Public Transport

C4.8 The bus stop on the Trunk Road provides a bus shelter and bus layby and is an approximate 20-minute walk (1.2km) to the south access of Dorman Point via the A66. This bus stop is served by Arriva bus service 62 and 64 which provide links to Middlesbrough Bus Station.

C4.9 South Bank railway station is an approximate 16-minute walk (1km) to the west of the site. The station is serviced by Northern, which provides hourly services to Bishop Auckland (via Darlington) and Saltburn.

C4.10 Adjacent to Dorman Point, the former Hot Metal Transfer Railway extends into the southern part of the site, both to the north and south of the Former Torpedo Ladle Workshop building. This does not provide a current public transport connection.

Highway Transport

C4.11 An internal private road network exists across the wider Teesworks area. The network within the Dorman Point site includes a road running in a north-east to south-west direction across the site which connects to Tees Dock Road in the north-east corner and to the roads around the Bolckow Industrial Estate in the south west corner, via the former Bessemer Gate.

C4.12 The external local highway network consists of the following key roads:

- Eston Road provides the main access into the development and connects to the A66 and Church Lane via a signalised junction;
- Tees Dock Road borders the eastern boundary of the site and connects to the A66 and the A1053(T) at a three-arm roundabout;
- The A66 is a dual four-lane carriageway which connects the A19(T) to the west with the A1053(T) and Trunk Road to the east. The A66 is a key east-west corridor that links Middlesbrough to Redcar;
- Normanby Road has a signalised junciton off the A66 to the east of Eston Road and provdies a connection to Eston Road via Puddlers Road;
- Church Lane connects to Eston Road at the A66 signalised junction; and
- Whitworth Road meets the A66 via a signalised junction to the west of the Eston Road / A66 junction and provides access into the Bolckow Industrial Estate.

C4.13 The SRN near the site consists of the following roads:

- The A1053(T), a four-lane dual carriageway, runs in a north-south direction and connects to the A66/Tees Dock Road/Trunk Road roundabout to the north and the A174(T) and B1380 High Street to the south; and
- The A174(T), a four -lane dual carriageway to the south of the site, is a key east-west corridor between Middlesbrough and Redcar, that connects the A19(T) to the further west and to the A1053(T) to the east.

C4.14 Existing two-way traffic flows across the network are summarised in Table C4.1 and contained within the TA (Appendix C1 of this ES).

Table C4.1: Existing (2020) Traffic Flows

Link	AM Peak Hour (08:00 – 09:00)			PM Peak Hour (17:00 – 18:00)		
	2020 Vehicle Flow	2020 HGV Flow	HGV %	2020 Vehicle Flow	2020 HGV Flow	HGV %
Eston Road	475	86	18%	603	109	18%
Church Lane	502	5	1%	424	4	1%
A66 –west of Eston Road	3,166	412	13%	3,255	423	13%
A66 – east of Eston Road	2,973	298	10%	2,834	283	10%
Normanby Road – north of A66	422	76	18%	662	119	18%

Link	AM Peak Hour (08:00 – 09:00)			PM Peak Hour (17:00 – 18:00)		
	2020 Vehicle Flow	2020 HGV Flow	HGV %	2020 Vehicle Flow	2020 HGV Flow	HGV %
Normanby Road – south of A66	588	6	1%	749	7	1%
Tees Dock Road	1,828	591	32%	1,130	362	32%
A1085 Trunk Road	1,351	95	7%	1,465	103	7%
A1053 Greystone Road	1,794	161	9%	1,601	144	9%
A174 east of Greystone Road	3,506	70	2%	3,519	70	2%

C4.15 The site has previously been used in iron and steelmaking and houses a redundant railway embankment. As the proposed development site is currently vacant, it does not generate any existing trips on the highway network.

C4.16 With regards to existing road safety conditions, the TA identifies three junctions locally where there is a geographic cluster of previous collisions:

- A66 / Eston Road / Church Lane signalised junction;
- A66 / Normanby Road signalised crossroads; and
- A66 / Old Station Road / Middlesbrough Road roundabout.

C4.17 No common causation factors have been identified except at the A66 / Normanby Road junction where vehicles turning right was recorded as the vehicle manoeuvre in five of the nine collision records.

Receptor Sensitivity

C4.18 The receptors in the assessment of transport effects are the roads that will be used by pedestrians, cyclists, bus passengers, car drivers and freight drivers in the Future Baseline. Taking into consideration baseline transport conditions and the assessment methodology (see paragraph C3.8), the sensitivity of each receptor is as summarised in Table C4.2.

Table C4.2: Receptor Sensitivity

Link	Sensitivity	Reason
Eston Road	Medium	Industrial road with high (18%) proportion of existing HGVs which will provide access to the development site.
Church Lane	Medium	Low traffic flows but a road that serves residential and community uses which increases the sensitivity of the receptor from low to medium
A66 – east of Eston Road junction	High	Heavily used route providing east-west connections
A66 – west of Eston Road junction	High	Heavily used route providing east-west connections
Normanby Road – north of A66	Medium	Low traffic flows but a road that serves other industrial sites and a key link to South Bank Railway Station which increases the sensitivity of the receptor.

Link	Sensitivity	Reason
Normanby Road – south of A66	Medium	Low traffic flows but a road that serves residential and community uses which increases the sensitivity of the receptor.
Tees Dock Road	Medium	Industrial road with high (>30%) proportion of existing HGVs. Average flows, but of medium significance as the road provides access to the seaport.
A1085 Trunk Road	Medium	Key distributor link with an average level of use that connects the town of Redcar with the A66 and A1053
A1053 Greystone Road	High	Highly used routes which form part of the SRN
A174 Greystone Road	High	Highly used routes which form part of the SRN

Future Baseline

C4.19 The future baseline considers the position at the site and the surrounding area if the proposed development were not to come forward for development (i.e. a no development scenario). In reality, this scenario is considered unlikely given the reasons set out within Chapter B (Sites Description and Surroundings), Section 9.0. Should the proposed development not go ahead then it is likely that some alternative development would happen on the site given both the local planning policy position set out in Chapter B and existing permissions. Therefore, the future baseline would be similar to that of the proposed development.

C4.20 The future baseline represents a scenario whereby existing permissions and consents at the site come forward. These existing permissions relate to highways layout, ground preparation and highways improvements (application references. R/2020/0318/FFM, R/2020/0270/FFM, R/2020/0283/PND, R/2020/0679/PND).

C4.21 The future baseline also includes traffic flows associated with cumulative schemes in the vicinity of the site. To capture the increase in traffic on the highway network as a result of these cumulative schemes, a growth factor has been extracted from the HE North Regional Transport Model (NRTM). This growth factor has been applied to all links within the study area to factor traffic up to 2033 when the site is expected to be operational. Information on the cumulative approach and traffic flow diagrams for all scenarios are contained within Appendix E of the TA (Appendix C1 of this ES).

C5.0 Potential Effects

Embedded Mitigation

Construction

C5.1 A Framework Construction Environmental Management Plan ('Framework CEMP') has been prepared and forms part of the embedded mitigation for the development. The CEMP identifies that a Construction Traffic Management Plan ('CTMP') will be implemented either at site level or for each development phase.

C5.2 A CTMP identifies the scale of construction traffic across the construction programme and provides details including:

- The proposed access arrangements for construction vehicles and staff and where materials and plant will be stored;
- The arrangements for co-ordinating and controlling delivery vehicles and who is responsible for monitoring this;
- The management of vehicles on site including loading / unloading arrangements;
- The location of any wheel wash facilities;
- Any necessary highway works and any changes to traffic orders to accommodate construction traffic; and
- Any other mitigation required to minimise the impact of construction traffic on the transport networks will be included.

C5.3 The volume of construction traffic is unknown at this stage and therefore the detail of this is not available for the CTMP, albeit the measures already anticipated are considered appropriate to address a worst-case scenario. Once detailed traffic data for the construction phase is available, the CTMP will be updated to reflect the data.

C5.4 These mitigation measures will be secured through a range of planning conditions, designed and constructed in accordance with RCBC guidance and will ensure that the development delivers the required primary and tertiary mitigation. This mitigation is taken into account in the potential effects section of this technical chapter.

Operation

C5.5 For the purpose of this EIA, the main access into the site will be via the new roundabout junction which will be constructed on Eston Road. The roundabout is being constructed to serve the STDC Regeneration Master Plan and facilitates access into Doman Point. The Parameters Plan for the site shows the development as having a minimum of three access points.

C5.6 A dedicated bus service will be provided to connect the local towns of Middlesbrough and Redcar to the development site. The bus service will travel into the site to provide a service that connects directly to the development. If at least 5% of people who would usually travel by car could be encouraged to travel by the bus service, it is estimated that it would remove 44 car trips in the AM peak hour. This forecast seems reasonable and would be realistic given that the bus would operate at least every 15 minutes, and therefore be capable of accommodating a much higher number of passengers.

C5.7 The bus service will be extended as additional development sites are occupied at Teesworks.

C5.8 A Framework Travel Plan ('FTP') is included in the TA (Appendix C1) This is expected to form part of a Teesworks wide Travel Plan. This will support the proposed bus service to facilitate access to the site and minimise the effects of operational traffic.

C5.9 The application is in outline, and therefore the detailed internal site layout has not yet been developed, however the proposed development will provide a high-quality industrial site which promotes walking and cycling through the provision of footways and secure cycle parking. Walking and cycling connections to the external network will be provided prior to occupation.

C5.10 Junctions and internal roads will be designed and constructed in accordance with Redcar and Cleveland Borough Council Guidance.

C5.11 These mitigation measures will be secured by planning condition and they are taken into account in the potential effects section of this technical chapter.

Major Hazards and Accidents

C5.12 The potential for major hazards and accidents associated with the proposed development and surrounding area, other than an assessment of road safety collisions, has not been included in the transport assessment as it is not considered relevant to this technical specialism.

Phasing

C5.13 For the purposes of this assessment, the construction of the Dorman Point development will commence in 2021 and will be completed in 2032. The assessment of operational effects has been undertaken for a future year scenario of 2033, when the development will be complete. It is however probable that some operational effects will occur prior to 2033.

C5.14 The phasing of any mitigation measures will be subject to further discussion with the relevant planning and highway authority.

During Construction

C5.15 As this is an outline planning application the end users of the development site, and therefore specifics of construction, are not known at the time of writing. As such, a quantitative construction traffic has not been included in the assessment. Notwithstanding this, and as referred to above, a CTMP has been embedded into the proposed development and this will be taken into account in any future assessment.

C5.16 It is expected that construction vehicles will access the site via Eston Road from the A66. Eston Road is an urban road which provides access to industrial land-uses; the future baseline indicates that HGV traffic on Eston Road would represent 18% of total peak hour traffic flows. Given the function of the street in the Future Baseline, Eston Road is not considered to be particularly sensitive to the short-term, temporary effect of construction traffic. It should also be noted that this area is well suited to industrial development, with infrastructure in place to accommodate the type of construction traffic that is expected to arise from the development. Whilst a detailed assessment cannot be undertaken at this stage, professional judgement indicates that, with a CTMP, any impacts would be minor and therefore the severance or amenity effect of construction traffic would be Not Significant.

C5.17 Construction traffic could affect driver delay at the A66/Eston Road junction. The short-term effects to driver delay are likely to be Not Significant. Any mitigation will be reflected in the CTMP as described in C5.4.

During Operation

Severance

C5.18 To assess any severance effects, the change in traffic flow has been assessed for the Future Baseline scenarios. Interpretation and professional judgement have been applied to determine the magnitude of effect. The study area (receptors) is the area identified on the traffic flow diagrams provided in Appendix E of the TA (Appendix C1).

C5.19 Table C5.1 identifies the percentage change in vehicle and HGV trips on key receptor links between the 2033 Future Baseline and the 2033+ Future Baseline with development in the AM peak hour. Further traffic flow information is available within the TA, Chapter 5 (at Appendix C1 of this ES). As set out in paragraph C4.20, the future baseline with the development includes the cumulative schemes in the vicinity of the site.

Table C5.1: Assessment of Severance, AM Peak Hour (2033 During Operation)

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
Eston Road	507	91	870	106	172%	116%
Church Lane	525	5	87	11	17%	220%
A66 – west of Eston Road	3,326	432	269	33	8%	8%
A66 – east of Eston Road	3,176	318	530	65	17%	20%
Normanby Road – north of A66	447	80	97	12	22%	15%
Normanby Road – south of A66	615	6	52	6	8%	100%
Tees Dock Road	2,041	143	0	0	0%	0%
A1085 Trunk Road	1,452	102	228	29	16%	28%
A1053 Greystone Road	1,984	179	288	34	15%	19%
A174 east of Greystone Road	3,844	77	161	19	4%	25%

C5.20 Table C5.2 shows the percentage change in vehicle and HGV trips on key receptor links between the 2033 Future Baseline and the 2033 Future Baseline with development in the PM peak hour.

Table C5.2: Assessment of Severance, PM Peak Hour (2033 During Operation)

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
Eston Road	646	116	671	65	104%	56%
Church Lane	437	4	67	6	15%	137%
A66 – west of Eston Road	3,441	447	218	20	6%	4%
A66 – east of Eston Road	3,045	305	419	39	14%	13%

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
Normanby Road – north of A66	711	128	75	17	11%	13%
Normanby Road – south of A66	807	8	46	5	6%	62%
Tees Dock Road	1,642	525	0	0	0%	0%
A1085 Trunk Road	1,612	113	190	19	12%	17%
A1053 Greystone Road	1,736	156	214	19	12%	12%
A174 east of Greystone Road	3,837	77	126	10	3%	13%

C5.21 To assess the change in traffic flows, judgement has been made on the magnitude of change in accordance with IEMA guidance. Changes in traffic of less than 10% are considered to have no discernible environmental effect, given that daily variations in background traffic flow may fluctuate by this amount. A 30% change represents a reasonable threshold above which a change would be perceptible.

C5.22 Tables C5.1 and C5.2 show the magnitude of change with development traffic is greater than 30% at the following location:

- Eston Road has a magnitude of change in the AM peak hour of a 172% increase in total vehicles and a 116% increase in HGV traffic. The respective values forecast during the PM peak hour are 104% and 56%.

C5.23 The sensitivity of this receptor has been reviewed to determine the significance of these changes as follows:

- Eston Road provides access to the development site and allows access to other premises neighbouring Dorman Point. The sensitivity of this receptor is medium and the large magnitude in traffic and HGV flow is a result of very low baseline flows. The significance of the permanent effect will therefore be minor adverse. This is not considered to be a significant impact.

C5.24 All other locations have less than a 30% increase in overall vehicles and there is therefore considered to be a Negligible effect in severance and therefore Not Significant.

Driver and Bus User Delay

C5.25 The IEMA Guidelines note that these delays are only likely to be '*significant' when the traffic in the network surrounding the development is already at, or close to, the capacity of the system.'*

C5.26 To determine the significance of driver and bus user delay, the junction assessment programs have been used to assess capacity at the junctions within the study area, alongside professional judgement for a worst-case scenario. Table C5.3 sets out the junction capacity forecast at each of the key junctions with the addition of development traffic at 2033. A copy of the junction capacity assessments on which this is based is contained within the TA (contained within Appendix C1 of this ES).

Table C5.3: Average Driver Delay (seconds) During Operation (2033)

Location	Receptor Sensitivity	Description of potential effect	Magnitude of change	Effect significance
Eston Road Proposed site access	Medium	Although there will be a change in road layout, the proposed roundabout has been designed to work within capacity, and therefore is not anticipated to have any significant delays.	Minor	Negligible
A66/Eston Road	High	The junction is over capacity in the AM peak with the additional Dorman Point traffic and those travelling through the junction would experience significant delay.	Substantial	Substantial
A66 / Normanby Road	High	The junction is operating close to capacity in the Future Baseline and the addition of development traffic is forecast to exacerbate delay, particularly on the A66 eastbound approach during the AM peak.	Moderate	Moderate
A66 / Tees Dock Road Roundabout	High	The junction is over capacity with the additional Dorman Point traffic which would result in significant delay. Roads most affected are the westbound approach in the AM peak hour and eastbound approach in the PM peak hour.	Moderate	Moderate
A1085 Trunk Road / A1053 Greystone Road roundabout	High	Development adds delay but the junction operates within capacity with development traffic	Minor	Moderate
A174/Greystone Road Roundabout	High	The junction is forecast to exceed capacity with and without development traffic	Moderate	Moderate

C5.27 The table shows that the proposed development could have a **Significant Substantial Adverse** effect on driver delay at the A66 / Eston Road junction and a **Significant Moderate Adverse** effect at four other junctions. Two of these junctions are located on the A66 which is a bus route and, therefore, will also impact bus users.

C5.28 **Pedestrian and Cyclist Amenity**

C5.29 IEMA guidelines recommend pedestrian and cyclist amenity should be assessed where there is a significant increase in HGV flows. A significant change would be where the HGV component of traffic flow is halved or doubled, and therefore should be assessed if the HGV component of traffic flow increases by 100%.

C5.30 Pedestrian and cyclist amenity have been assessed by identifying any changes in traffic flow on roads used by pedestrians and cyclists. Baseline pedestrian surveys have not been possible, but it is assumed that existing pedestrian and cyclist activity in the local area is limited as the site is vacant. Any significant changes are shown in Table C5.4.

Table C5.4: Pedestrian and Cyclist Amenity (During Operation)

Location	Receptor Sensitivity	Description of potential effect	Magnitude of change	Significance
A66/Eston Road	Medium	HGV increase is over 100% in the AM peak and 56% in the PM peak however the increase in traffic flow should not affect the signalised toucan crossing on Church Lane / A66 crossroads.	Moderate	Minor
A66/Church Lane crossroads	Medium	Although the HGV increase is over 100%, the actual number of HGVs is relatively low and the increase in traffic flow should not affect the signalised toucan crossing on Church Lane / A66 crossroads.	Minor	Minor
Normanby Road south of A66	Medium	Increase in traffic flow should not affect the signalised crossing on Normanby Road, although the HGV increase is over 100%, the actual number of HGVs is low.	Negligible	Negligible
A66 / Tees Dock Road Roundabout	High	Increase in vehicular traffic through the junction could make it more difficult for non-motorised users to cross at the uncontrolled crossing located on the A66 arm of the junction, however, HGV flow change is less than 30%.	Negligible	Negligible
A1053/ Trunk Road	High	Increase in vehicular traffic on the link could affect the amenity of users of the segregated footway and cycleway that runs parallel to the northbound carriageway of the A1053 between the Trunk Road and the A66, however, HGV flow change is less than 30%.	Negligible	Negligible
A1085 Trunk Road / A1053 Greystone Road roundabout	Medium	Increase in vehicular traffic through the junction could make it more difficult for non-motorised users to cross at the uncontrolled crossings (Wilton access road, Greystone Road southbound and the Trunk Road southern arm), however, HGV flow change is less than 30%.	Negligible	Negligible
A174/ Greystone Road Roundabout	High	Increase in vehicular traffic through the junction could affect the amenity of users on the footway that travels underneath the junction via a subway, however, HGV flow change is less than 30%.	Negligible	Negligible

C5.31 The sensitivity of these receptors has been reviewed to determine the significance of these changes as follows:

- A66/Eston Road signalised junction has a signalised pedestrian toucan crossing on Eston Road. The HGV change is significant, with an increase of over 100% in both the AM and PM peak hours due to Eston Road being the site access. The effect on pedestrian and cyclist amenity at this location is therefore considered to be permanent, Minor Adverse as the

crossing facility is already signalised to mitigate the impact on non-motorised users. This is Not Significant;

- A66/Church Lane signalised junction has a signalised pedestrian toucan crossing on Church Lane. The HGV change is significant and is over 100% however the actual number of HGVs is 11 and 6 in the AM and PM peak respectively, which is relatively low. Therefore, the effects on pedestrian and cyclist amenity at this location is considered to be permanent Minor Adverse as the crossing facility is already signalised to mitigate the impact on non-motorised users. This is Not Significant;
- Normanby Road south of the A66 has a signalised pedestrian crossing and although HGV flow increases by 100%, the actual number of HGVs in the peak hours is below 6 HGVs, which is considered negligible. The effect on pedestrian and cyclist amenity at this location is therefore considered to be Negligible. This is Not Significant;
- A66 / Tees Dock Road / A1053(T) roundabout – the junction has an unsignalised pedestrian crossing on the A66 arm of the junction where traffic is forecast to increase by 17% in the AM peak hour and 14% in the PM peak hour, which is less than the IEMA assessment criteria of 30% traffic increase. The increase in traffic is unlikely to be perceptible and will be within the normal variation of daily traffic flow. The effect on pedestrian and cyclist amenity at this location is therefore considered to be Negligible. This is Not Significant;
- A1053(T) – as part of the SRN, this link is considered a highly sensitive receptor and the magnitude of change is considered to be negligible as the traffic flow change is less than 30%. The change in traffic may be perceptible to users of the segregated footway and cycleway that runs parallel to the northbound carriageway and the effect is considered to be of Negligible significance. This is Not Significant;
- A1085 Trunk Road / A1053(T) roundabout – the junction connects to the SRN and the magnitude of change is considered to be negligible as the arms predominantly affected already have signalised crossing facilities to mitigate the impact on non-motorised users. Overall therefore, the effect is considered to be of Negligible significance. This is Not Significant; and
- A1053(T) Greystone Road/ A174(T) roundabout – the junction is part of the SRN and therefore a high sensitivity receptor. However, pedestrians and cyclists at the junction benefit from segregated routes that travel under the junction via a subway. The effect on pedestrian and cyclist amenity of an increase in traffic is therefore considered to be Negligible. This is Not Significant.

Accidents and Safety

C5.32 There is a proposed change to the highway network. The new Eston roundabout access into the development is subject to a separate planning application (application number R/2020/0270/FFM).

C5.33 The TA identifies three junctions locally where there are clusters of collisions on the existing network:

- A66/Eston Road/Church Lane signalised junction;
- A66/Normanby Road signalised crossroads; and
- i.A66/Old Station Road/Middlesbrough Road roundabout.

C5.34 At the A66/Eston Road/Church Lane junction there are a couple of collisions classified as serious, involving pedal cyclists, but there appears to be no common causation factor to the collisions. As there is no evidence of a prevailing road safety issue at the junction, the effect of

the forecast increase in traffic flow generated by the development in this location is expected to be Negligible. This is not Significant.

C5.35 There is an apparent trend that the collisions at the A66/Normanby Road crossroads appear to be related to vehicles making a turning manoeuvre. Most of the traffic generated by the proposed development is expected to travel straight-ahead at this junction. It will not therefore increase turning manoeuvres at the junction, but it will increase the volume of oncoming traffic and could have a Minor Adverse effect on accidents and safety. This is Not Significant.

C5.36 At the A66/Old Station Road/Middlesbrough Road roundabout all the accidents are categorised as slight and there are no common causation factors, with accidents distributed around the junction and appearing to be minor shunt type collisions. The proposed development will add additional traffic through this junction but given that there is no evidence of a prevailing road safety issue at any arms of the junction, the effect of the increased traffic flow on accidents and safety is expected to be Negligible. This is Not Significant in EIA terms.

C6.0 Mitigation and Monitoring

During Construction

C6.1 As set out in the embedded mitigation section of this Chapter, a Framework CEMP and CTMP will minimise the impact of construction traffic on the transport networks. The qualitative assumptions that have been made for the construction stage do not identify the need for additional mitigation measures over and above the requirements outlined in the CEMP.

During Operation

C6.2 Significant effects have been identified on five receptors within the potential effects section of this Chapter. In order to reduce these effects and minimise the impact of the development on the road network, the following additional mitigation measures are proposed:

1 Occupier Travel Plan for each of the end occupiers at the development site;

2 Wider travel planning measures, to reduce development traffic, encourage sustainable travel and the decarbonisation of the transport network. These measures are detailed in the Travel Plan Framework, Chapter 8 of the TA (Appendix C1), for example: ensuring footway and cycleway connections are provided, providing secure cycle parking, providing staff up to date information on public transport services and walking/cycling provisions, promotions such as National Travel Awareness day and a 'Walking Buddy' Scheme, promoting car sharing, and consolidating servicing trips and deliveries;

3 A review of traffic signals to see if junctions can be optimised (at the A66 / Eston Road junction and the A66 / Normanby Road signalised crossroads); and

4 Potential junction improvements for the A66 / Tees Dock Road Roundabout and A174/Greystone Road Roundabout.

C6.3 These mitigation measures will be secured by way of an appropriately worded planning condition or obligation.

C6.4 In addition to the above, and whilst a commitment cannot be made at this stage of the planning process, once adopted the emerging STDC Transport Strategy may provide an opportunity to further reduce the impacts of the proposed development on the sensitive receptors.

C6.5 The Transport Strategy is currently being prepared for the wider Teesworks site and it will be used by Teesworks for the effective delivery of development across the site, recognising the opportunities and benefits the single-ownership of the Teesworks area brings to delivering interventions that will further encourage modal shift away from the private car and an increased use of public transport. The strategy will identify opportunities for physical works interventions such as the creation of integrated public transport hubs, as well as walking and cycling infrastructure, together with behavioural interventions such as active travel planning measures. Teesworks, working in conjunction with public transport providers and end-occupiers, will deliver / apply measures identified in the Transport Strategy where it is suitable and feasible to do so (i.e. where delivery is subject to usage demand/critical mass) and when the specific type, scale and layout of development is known.

C7.0 Residual Effects

During Construction

C7.1 The assessment concludes that the temporary effect on severance and amenity, as a result of construction traffic, is not expected to be significant, albeit it has not been possible to undertake a quantitative assessment at this stage and instead this will be undertaken once the detailed design of the scheme is known.

During Operation

C7.2 The effects, and any residual effects, of the proposed development are summarised in Table C7.1. In EIA terms it is expected that there will be a **Significant and Moderate Adverse permanent** residual effect on driver and bus user delay at the A66 / Eston Road junction. The impacts will be permanent in nature, however there are opportunities to reduce the impact further through the emerging Transport Strategy for the Teesworks area, as described in Section C6.0 above, although no commitment is being made to this at this stage of the process. All other effects will be Minor or Negligible and Not Significant.

Table C7.1: Summary of Residual Effects (During Operation)

Receptor	Potential effect	Mitigation	Residual Effect
Eston Road	Minor adverse effect on Severance	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Minor Adverse
A66/Eston Road	Substantial adverse effect on Driver and Bus Delay	Review of traffic signals to see if junction operation can be optimised. Implement travel planning measures to encourage sustainable travel and contribute towards decarbonising the transport network. If effective, promotional measures should reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	**Moderate Adverse**
A66/Normanby Road signalised crossroads	Moderate adverse effect on a Driver and Bus Delay	Review of traffic signals to see if junction operation can be optimised. Implement travel planning measures to encourage sustainable travel and contribute towards decarbonising the transport network. If effective, promotional measures should reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Minor Adverse
A66/Tees Dock Road Roundabout	Moderate adverse effect on Driver and Bus Delay	Junction improvements are expected to be delivered to support development on the Lackenby area of the Teesworks site. When implemented, this will reduce delay to users of this development.	Minor Adverse

Receptor	Potential effect	Mitigation	Residual Effect
A1085 Trunk Road / A1053 Greystone Road roundabout	Moderate adverse effect on Driver and Bus Delay	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline PM Peak and therefore reduce the volume of additional traffic through the junction.	Minor Adverse
A174/ Greystone Road Roundabout	Moderate adverse effect on Driver and Bus Delay	Junction improvements are expected to be delivered to support wider development on the Teesworks site. Mitigation measures to address the traffic impacts associated with this junction will be agreed. Travel Planning measures will also be introduced at the outset of this development to reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Minor Adverse
A66/Eston Road crossroads	Minor adverse effect on pedestrian and cyclist amenity	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Minor Adverse
A66/Church Lane crossroads	Minor adverse effect on pedestrian and cyclist amenity	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Negligible
A66/Normanby Road	Minor adverse effect on accidents and safety	Review of traffic signals to see if junction operation can be optimised and implement travel planning measures to reduce forecast traffic flow.	Negligible

C8.0 Summary & Conclusions

C8.1 The assessment of the environmental effects of the proposed development in respect of transport has covered severance, driver and bus user delay, pedestrian and cyclist amenity and accidents and safety.

C8.2 A TA has been prepared which details the transport aspects of the proposed development and the data used in its assessment in detail.

C8.3 The assessment has been undertaken in the context of guidance from the IEMA and in the context of the TA prepared in support of the planning application.

C8.4 A CEMP and CTMP are embedded into the design of the development to minimise the impact of construction traffic on the transport networks. No additional mitigation measures over and above the requirements outlined in the CEMP have been identified at this stage.

C8.5 Similarly, a bus service is proposed as embedded mitigation to encourage sustainable transport to the development site. Further additional mitigation is expected through the implementation of travel planning measures and contributions towards junction upgrades. However, there are also opportunities to reduce the impact further through the emerging Transport Strategy for the Teesworks area, as described in Section C6.0 above, although no commitment is being made to this at this stage of the process.

C8.6 No allowance has been made to discount the effects of traffic generated by previous uses on site. Trips generated by the previous industrial use will have been on the transport network prior to the site being cleared.

C8.7 The effects, and any residual effects, of the proposed development during operation are summarised in Table C8.1. Note, if no effect has been identified they are not included below. As a high level qualitative assessment has been done for the construction phase, the results are not set out below.

Table C8.1: Summary of Transport Effects during operation

Receptor	Impact	Potential Effects (taking account of embedded mitigation)	Additional Mitigation and Monitoring	Residual Effects
Eston Road	Minor, permanent adverse effect on severance during operation	Division can occur within the community and between local businesses when it becomes separated by major traffic	None identified – Eston Road provides the main access into the site	Minor Adverse - as the main access the effect is unlikely to be reduced
A66/Eston Road Junction	Substantial, permanent adverse effect on driver and bus user delay	Junction performance based on capacity could be affected causing delay and queue on the junction during peak hours.	Junction operation will be reviewed to see if performance of existing infrastructure can be improved. Wider travel planning measures, to encourage sustainable travel and support the decarbonisation of the network, should reduce traffic demand.	**Moderate Adverse** – measures should improve junction performance and reduce forecast traffic flows to minimise the

Receptor	Impact	Potential Effects (taking account of embedded mitigation)	Additional Mitigation and Monitoring	Residual Effects
				impact at the junction
A66 / Normanby Road junction	Moderate, permanent adverse effect on driver and bus user delay	As Junction performance based on capacity could be affected causing delay and queues at the junction during peak hours.	Junction operation will be reviewed to see if performance of existing infrastructure can be improved. Wider travel planning measures, to encourage sustainable travel and support the decarbonisation of the network, should reduce traffic demand.	Minor Adverse assuming the junction operation is optimised and there are supporting travel planning measures
A66/Tees Dock Road Roundabout	Moderate, permanent adverse effect on driver and bus user delay	Junction performance based on capacity could be affected causing delay and queues at the junction during peak hours.	Junction operation will be reviewed to see if performance of existing infrastructure can be improved. Wider travel planning measures, to encourage sustainable travel and support the decarbonisation of the network, should reduce traffic demand .	Minor Adverse assuming the junction is improved and there are supporting travel planning measures
A1085 Trunk Road / A1053 Greystone Road roundabout	Moderate, permanent adverse effect on driver and bus user delay	Junction performance based on capacity could be affected causing delay and queues at the junction during peak hours.	Junction operation will be reviewed to see if performance of existing infrastructure can be improved. Wider travel planning measures, to encourage sustainable travel and support the decarbonisation of the network, should reduce traffic demand.	Minor Adverse – this assumes no change to the junction layout, but effect is expected to be reduced through travel planning measures alone
A174/ Greystone Road roundabout	Moderate, permanent adverse effect on driver and bus user delay	Junction performance based on capacity could be affected causing delay and queues at the junction during peak hours.	Junction improvements are expected to be delivered.	Minor Adverse assuming the junction is improved and there are supporting travel planning measures
A66/Eston Road crossroads	Minor, permanent adverse effect on	Potential accidents between pedestrians/ cyclists and the increased	Wider travel planning measures, to encourage sustainable travel and	Minor Adverse - as the main access the

Receptor	Impact	Potential Effects (taking account of embedded mitigation)	Additional Mitigation and Monitoring	Residual Effects
	pedestrian and cyclist Amenity	HGV flow. Pedestrians may attempt to cross the road; however, the crossing is a signalised crossing and therefore the increase in flow should not directly impact this.	support the decarbonisation of the network, should reduce traffic demand.	effect is unlikely to be substantially reduced
A66/Church Lane crossroads	Minor, permanent adverse effect on pedestrian and cyclist Amenity	Potential accidents between pedestrians/ cyclists and the increased HGV flow. Pedestrians may attempt to cross the road; however, the crossing is a signalised crossing and therefore the increase in flow should not directly impact this.	Wider travel planning measures, to encourage sustainable travel and support the decarbonisation of the network, should reduce traffic demand.	Negligible –the measures should reduce forecast traffic flows to minimise the impact at the crossing.
A66/Normanby Road	Minor, permanent adverse effect on accidents and safety	Previous accident trend related to turning movements, so an increase in traffic could potentially increase accidents.	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline and therefore reduce the volume of additional traffic through the junction.	Negligible - the mitigation measures should reduce the forecast traffic flows on this link

C9.0 Abbreviations & Definitions

CEng	Chartered Engineers
CEnv	Chartered Environmentalist
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
CTTP	Chartered Transport Planning Professional
DETR	Department of the Environment, Transport and the Regions
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	Heavy Goods Vehicle
HE	Highways England
IEMA	Institute of Environmental Management & Assessment
LCWIP	Local Cycling and Walking Implementation Plan
LTP	Local Transport Plan
MC	Middlesbrough Council
MHF	Materials Handling Facility
NPPF	The National Planning Policy Framework
NCR	National Cycle Route
NRTM	North Regional Transport Model
PRoW	Public Right of Way
RCBC	Redcar and Cleveland Borough Council
SRN	Strategic Road Network
SPD	Supplementary Planning Document
STDC	South Tees Development Corporation
STP	Strategic Transport Plan
TA	Transport Assessment
TVCA	Tees Valley Combined Authority

C10.0 References

1 Town and Country Planning (Environmental Impact Assessment) Regulations 2017

2 Ministry of Housing, Communities & Local Government (2019) National Planning Policy Framework

3 Tees Valley Combined Authority (2019) Strategic Transport Plan 2020-2030

4 Tees Valley Local Authorities (2018) Design Guide & Specification: Residential and Industrial Estates Development

5 Redcar and Cleveland Borough Council (2018) Local Plan

6 Redcar and Cleveland Borough Council (2011) Local Transport Plan 2011-21

7 Redcar and Cleveland Borough Council (2018) South Tees Area Supplementary Planning Document

8 South Tees Development Corporation (2019) South Tees Regeneration Masterplan

9 Department of the Environment, Transport and the Regions (DETR) (2000) Environmental Impact Assessment: A Guide to Procedures

10 Institute of Environmental Management & Assessment (IEMA) (2004) Guidelines for Environmental Impact Assessment

11 Ministry of Housing, Communities & Local Government (2014) Travel Plans, Transport Assessments and Statements Guidance