



South Industrial Zone

Environmental Statement
July 2020

Volume 2

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:

1 Appendix C1: Transport Assessment (TA).

C1.4 This is also being submitted in support of the outline planning application and it contains the TA Scoping Report in Appendix B.

About the Author

C1.5 The author of this Chapter is a Chartered Transport Planning Professional (CTPP) with over 17 years' experience in undertaking transport assessments for Environmental Statements.

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

C1.7 This assessment has been approved by an Associate at Arup who has over 20 years of experience in environmental assessment and is a CEnv.

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 Masterplan 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 STDC site:

- 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 STDC site, 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 STDC site 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 South Tees site, 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 on the South Tees site 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.

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

- C2.12 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.
- C2.13 The SPD specifies that the area wide Transport Strategy for the STDC site 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.

South Tees Regeneration Masterplan (2019)

- C2.14 The South Tees Regeneration Masterplan [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 masterplan also notes that consideration will be given to the impact on the local highway network of the planned major increases in traffic resulting from the STDC development, 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:
- Environmental Impact Assessment: A Guide to Procedures [9]; and
 - Guidelines for Environmental Impact Assessment [10].
- C3.2 The methodology used for the assessment of transport impacts is summarised as follows:
- Consultation with the relevant officers at Redcar and Cleveland Borough Council (RCBC), Middlesbrough Council (MC) and Highways England (HE);
 - 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);
 - Consideration of potential impacts resulting from the operational development;
 - Proposal of any mitigation measures to offset any likely significant impacts in relation to the above; and
 - 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 traffic flow diagrams in the TA Scoping Report (TA, Appendix B) illustrate the extent which stretches from the A66/Old Station Road/Middlesbrough Road junction in the west, the A1053/A1085 Trunk Road junction to the east and the A174/A1053 Greystones Road roundabout to the south.
- 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 (2028 with development):
- Severance (change in traffic flows);
 - Driver and bus user delay (informed by junction capacity assessments);
 - Pedestrian and cyclist amenity (change in traffic flows on local routes used by pedestrians and cyclists); and
 - 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 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.

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 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 effects are considered to be ‘significant’.

C3.11 All operational effects are considered to be permanent. Committed developments are included in the growth factor accounted for in the Future Baseline and, therefore, cumulative effects have been accounted for in the main assessment. Residual effects have been identified if they remain after mitigation has been taken into account.

Consultation

C3.12 A Transport Scoping Report (see Appendix B of the TA) for the proposed development was issued on 19 June 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.

C3.13 Consultation responses are included in the TA (Appendix B). Some of the issues raised by the consultees have been addressed in the TA. However, there are some aspects that have not been completed prior to planning submission. Arup will continue to liaise with all parties on these matters following submission and throughout the determination of the application. It is expected that any outstanding issues can be addressed by way of an addendum (where required).

- C3.14 Arup is preparing the Transport Strategy for the wider STDC site, 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

- C3.15 Detailed construction information is not yet available and, therefore, assumptions have been made about likely construction traffic routes and traffic management measures.
- C3.16 Due to current (summer 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.
- C3.17 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.
- C3.18 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

Walking and Cycling

- C4.1 Walking facilities in the vicinity of the proposed development are currently limited. All roads have footways on at least one side of the carriageway and the footway on Smith's Dock Road connects the site to South Bank railway station via a footbridge which crosses the railway which runs along the southern boundary of the proposed development site. The footbridge also provides a connection to the Teesdale Way Public Right of Way (PRoW) which runs parallel to the railway line.
- C4.2 The nearest National Cycle Route (NCR) is Route 1 (NCR1) which runs across Redcar Road and parallel to Middlesbrough Road, approximately 1.3km (linear distance) to the south of the site. NCR1 provides strategic connections between Saltburn, Marske, Redcar and Middlesbrough. On-road local cycle routes are also provided to the south of the site and provide access to the residential areas of Eston, Grangetown and South Bank.

Public Transport

- C4.3 There are currently no bus services in the immediate vicinity of the site, with the nearest bus stops located in the residential area of South Bank, approximately 1.3km walking distance to the south of the site. The bus stops are served by Arriva bus services 6 and 64 / 64A.
- C4.4 South Bank railway station is located approximately 900m to the south of the site (11min walking distance). The station is serviced by Northern, which provides hourly services to Bishop Auckland (via Darlington) and Saltburn.

Highway Network

- C4.5 The local highway network consists of the following key roads:
- Smith's Dock Road is a local access road (two-lane single carriageway) that provides the main access into the development. As the site is currently vacant there is minimal traffic on the road in 2020;
 - Dockside Road, a two-lane single carriageway, runs in an east-west direction to the west of the site and provides access to the site via the new roundabout that has been constructed at its junction with Smith's Dock Road;
 - Old Station Road runs in a north-south direction and connects Dockside Road to the north with the A66 to the south;
 - 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; and
 - Tees Dock Road provides a secondary access to/from the eastern boundary of the proposed development and connects to the A66 and the A1053(T) at a three-arm roundabout.
- C4.6 There are also connector routes located off the A66, within the study area, that provide access to employment and residential areas including Middlesbrough Road, Normanby Road and Eston Road.
- C4.7 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.

Existing two-way traffic flows across the network are summarised in Table C4.1 and contained within the TA submitted in support of the planning application.

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 %
Dockside Road, east of Old Station Road	265	64	24%	166	40	24%
Old Station Road	744	132	18%	570	101	18%
Middlesbrough Road (east)	161	2	1%	209	2	1%
A66 – Old Station Road to Normanby Road	3,311	419	13%	3,153	399	13%
A66 – Normanby Road to Eston Road	3,166	401	13%	3,255	412	13%
A66 – Eston Road to Tees Dock Road	2,973	298	10%	2,834	284	10%
Tees Dock Road	1,828	591	32%	1,130	365	32%
A1085 Trunk Road	1,351	95	7%	1,465	103	7%
A1053 Greystones Road	1,794	153	9%	1,601	137	9%
A174 east of Greystones Road	3,506	71	2%	3,519	71	2%
A174 west of Greystones Road	3,201	126	4%	3,279	129	4%

C4.8 The south-eastern corner of the site was previously used as landfill and for waste management facilities. However, as the proposed development site is currently vacant, it does not generate any existing trips on the highway network.

C4.9 With regards to existing road safety conditions, the TA identifies three junctions locally where there is a geographic cluster of previous collisions:

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

Receptor Sensitivity

- C4.10 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
Dockside Road, east of Old Station Road	Low	Industrial road with high (>20%) proportion of existing HGVs and relatively low flows
Old Station Road	Medium	Industrial road with high (18%) proportion of existing HGVs which provides access to Teesport Commerce Park
Middlesbrough Road (east)	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 – Between Old Station Road and Tees Dock Road	High	Heavily used route providing east-west connections
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 a sea port.
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 Greystones Road and A174	High	Highly used routes which form part of the SRN

Future Baseline

- C4.11 The future baseline considers the position at the site and in the surrounding area if the proposed development were not to come forward for development. Without the development it is reasonable to assume that the cumulative schemes in the vicinity of the site would come forward. Traffic flows associated with cumulative schemes identified in Chapter B of this ES in the vicinity of the site have been reviewed and there are local developments that will add traffic to the network within the study area, particularly the York Potash development which includes a Materials Handling Facility (MHF) at Wilton (reference R/2014/0626/FFM) and a conveyor route to Bran Sands storage facility. However, it has not been possible to trace the traffic flow diagrams that are provided in the 2014 assessment for the York Potash development.
- C4.12 Therefore, to account for future growth and develop the Future Baseline scenario, a growth factor from the HE North Regional Transport Model (NRTM) has been applied to highway links within the study area to factor traffic up to 2028 when the site is expected to be operational.

Traffic flow diagrams for all scenarios are contained within the TA submitted in support of the planning application.

C5.0 **Potential Effects**

Embedded Mitigation

- C5.1 The proposed development will provide a high-quality industrial site which promotes walking and cycling through the provision of footways and secure cycle parking.
- C5.2 Two vehicular accesses will be provided to disperse trips across the network. The main access into the site will be via the new roundabout junction which has been constructed at the junction of Smith's Dock Road and Dockside Road. The roundabout has been constructed to serve the STDC Regeneration Masterplan and facilitate access into the SIZ. There is also a secondary access provided on the eastern boundary of the site which connects to Tees Dock Road.

During Construction

- C5.3 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, construction traffic has not been included in the assessment.
- C5.4 It is however expected that construction vehicles will access the site via Old Station Road and Dockside Road from the A66. Old Station Road and Dockside Road are urban roads which provide access to industrial land-uses; the future baseline indicates that traffic on Dockside Road is forecast to comprise 24% HGVs with Old Station Road forecast to have 17% HGVs. Given the function of these streets in the Future Baseline, these roads are not considered to be particularly sensitive to the short-term, temporary effect of construction traffic. Whilst a detailed assessment cannot be undertaken at this stage, professional judgement indicates that any impacts would be minor and therefore the severance or amenity effect of construction traffic would not be significant.
- C5.5 Construction traffic could affect driver delay at the A66/Old Station Road/Middlesbrough Road roundabout so there may be short-term effects to driver delay. However, as the volume of construction traffic is unknown at this stage, a junction capacity assessment has not been undertaken. Once traffic data for the construction phase is available, a Construction Traffic Management Plan (CTMP) will be prepared and the impact on the highway network reviewed.

During Operation

Severance

- C5.6 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 the TA submitted in support of the planning application.
- C5.7 Table C5.1 identifies the percentage change in vehicle and HGV trips on key receptor links between the 2028 Future Baseline and the 2028 Future Baseline with development in the AM peak hour. Further traffic flow information is available within the TA (at appendix C1 of this ES).

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

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
Dockside Road, east of Old Station Road	285	68	818	82	287%	119%
Old Station Road	791	141	450	41	57%	29%
Middlesbrough Road east	168	2	39	3	23%	208%
A66 – Old Station Road to Normanby Road	3,404	431	99	18	3%	4%
A66 –Normanby Road to Eston Road	3,244	411	90	18	3%	4%
A66 – Eston Road to Tees Dock Road	3,063	307	114	20	4%	6%
Tees Dock Road	1,956	632	546	54	28%	9%
A1085 Trunk Road	1,417	99	175	15	12%	15%
A1053 Greystones Road	1,919	164	238	19	12%	12%
A174 east of Greystones Road	3,741	76	137	11	4%	15%
A174 west of Greystones Road	3,411	134	91	8	3%	6%

C5.8 Table C5.2 shows the percentage change in vehicle and HGV trips on key receptor links between the 2028 Future Baseline and the 2028 Future Baseline with development in the PM peak hour.

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

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
Dockside Road, east of Old Station Road	175	42	767	56	440%	133%
Old Station Road	598	106	562	22	94%	21%
Middlesbrough Road east	220	2	32	1	15%	24%

Receptor	Base Vehicle Flow	Base HGV Flow	Development – Vehicle Trips	Development – HGV Trips	Vehicle % Change	HGV % Change
A66 – Old Station Road to Normanby Road	3,242	411	350	1	11%	0%
A66 –Normanby Road to Eston Road	3,351	424	327	2	10%	0%
A66 – Eston Road to Tees Dock Road	2,938	295	313	4	11%	1%
Tees Dock Road	1,207	390	106	22	9%	6%
A1085 Trunk Road	1,561	109	171	10	11%	9%
A1053 Greystones Road	1,668	142	202	9	12%	7%
A174 east of Greystones Road	3,727	75	122	5	3%	6%
A174 west of Greystones Road	3,517	138	73	4	2%	3%

C5.9 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.

C5.10 Table C2 and Table C3 show the magnitude of change is greater than 30% at the following locations:

- Dockside Road, east of Old Station Road where the magnitude of change in the AM peak hour is a 287% increase in vehicles and a 119% increase in HGV traffic. The respective values forecast during the PM peak hour are 440% and 133%;
- Old Station Road is forecast to experience a 57% increase in vehicles in the AM peak hour and a 94% increase in traffic in the PM peak hour. HGV flows increase by 29% and 21% respectively; and
- Middlesbrough Road is forecast to experience a 208% increase in HGV flows in the AM peak hour.

C5.11 The sensitivity of these receptors has been reviewed to determine the significance of these changes as follows:

- Dockside Road, east of Old Station Road, provides access into the STDC site and there are no other premises with direct access onto Dockside Road. The sensitivity of the receptor is therefore considered to be low and the large magnitude of change in traffic and HGV flows is as a result of very low baseline flows. The significance of the permanent effect would therefore be **minor adverse**;
- Old Station Road provides a connection from Teesport Commerce Park to the A66. It is, therefore, considered to be receptor of medium importance and as the magnitude of change

in flows would be perceptible, the significance of the permanent effect is considered to be **moderate adverse**;

- Traffic flows on Middlesbrough Road are forecast to be low in the future baseline which results in a large magnitude of change with the addition of development traffic. Given that there are some residential and community properties on Middlesbrough Road (east) the receptor has been defined as of medium sensitivity, despite being lightly used. The change in traffic forecast in the AM peak hour is therefore considered to have a permanent **moderate, adverse** significance.

Driver and Bus User Delay

C5.12

To determine the significance of driver and bus user delay, values of delay have been extracted from the junction assessment programs used to assess capacity at the junctions within the study area, alongside professional judgement. Table C5.3 sets out the degree of change in delay forecast at each of the key junctions with the addition of development traffic. A copy of the junction capacity assessments on which this is based is contained within the TA (contained within Appendix C1 of this ES and submitted in support of the planning application).

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

Location	Receptor Sensitivity	Description of potential effect	Magnitude of change	Effect significance
Site Access roundabout	Low	Greatest increase in delay of 5 seconds on the development access arm of roundabout in PM peak.	Minor	Minor adverse
Dockside Road/ Old Station Round roundabout	Low	Greatest increase in delay of 6 seconds on the Dockside Road eastbound approach to junction in AM peak.	Minor	Minor adverse
A66/Old Station Road/ Middlesbrough Road roundabout	Medium	Delays forecast to drivers and bus users (64 bus service) on Middlesbrough Road in AM peak hour and delay to drivers on Old Station Road in PM peak.	Moderate	Moderate adverse
A66/Tees Dock Road/A1053 roundabout	Medium	Greatest increase in delay is on Tees Dock Road in PM peak.	Moderate	Moderate adverse
A1053/A1085 Trunk Road roundabout	High (A1053 is part of the Strategic Network)	Minimal changes in vehicle delay. Greatest increase in delay is on the A1053 travelling eastbound in the PM peak with a forecast increase of 6.3 seconds.	Minor	Moderate adverse

C5.13

The table shows that the proposed development could have a significant **moderate adverse** effect on driver delay at three junctions, with one of the junctions being a bus route and, therefore, also impacting bus users.

Pedestrian and Cyclist Amenity

C5.14

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. The receptors have therefore been identified as those locations where there is an existing pedestrian crossing or a PRow. Any 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
Smith's Dock Road	Low	Pedestrians and cyclists using the main access or using the route to access the footbridge over the railway to access South Bank station, or the PRow on the south side of the railway line, will notice a considerable change in vehicular activity.	Moderate	Minor beneficial
A66/Tees Dock Road/A1053 roundabout	Medium	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.	Minor	Negligible
A1053	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.	Moderate	Moderate adverse
A1085 Trunk Road/A1053 roundabout	High	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).	Minor	Minor adverse
A1053 Greystones Road/A174 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.	Negligible	Negligible

C5.15

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

- Smith's Dock Road – the magnitude of change is moderate as the road is lightly trafficked without the development. In terms of amenity, an increase in traffic flow will create a greater sense of passive surveillance and could therefore improve amenity. There are, however, no other external measures proposed to enhance the public realm. The overall effect on pedestrian and cyclist amenity is therefore considered to be **minor beneficial** as the increase in activity enhances the perceived security of the route and may encourage more visitors to walk and cycle to the site from South Bank station and wider connections via the Teesdale Way;

- 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 4% in the AM peak hour and 11% in the PM peak hour. Although the PM peak hour change is slightly higher, 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**;
- A1053(T) – as part of the SRN, this link is considered a highly sensitive receptor and the magnitude of change is considered to be moderate as it connects to Tees Dock Road which provides one of the vehicular accesses into the proposed development and will therefore accommodate a high proportion of development traffic. 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 **moderate adverse** significance;
- A1085 Trunk Road/ A1053(T) roundabout – the junction connects to the SRN and is therefore considered to be a highly sensitive receptor in relation to vehicular traffic. The magnitude of change is however considered to be minor 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 **minor adverse** significance; and
- A1053(T) Greystones 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**.

Accidents and Safety

- C5.16 There are no external highway works proposed as part of the proposed development that would alter the highway layout.
- C5.17 The TA identifies three junctions locally where there are clusters of collisions:
- A66/Old Station Road/Middlesbrough Road roundabout;
 - A66/Normanby Road signalised crossroads; and
 - A66/Eston Road/Church Lane signalised junction.
- C5.18 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**.
- C5.19 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.
- C5.20 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**.

C6.0 **Mitigation and Monitoring**

During Construction

- C6.1 The end users of the development site, and therefore specifics of construction, are not known at the time of writing. As such, construction traffic has not been included in the assessment. A CTMP has not yet been prepared, but it is expected to be conditioned as part of the planning process and will identify any necessary mitigation to minimise the impact of construction traffic on the transport networks. No mitigation measures over and above the requirement for a CTMP have been identified at this stage.

During Operation

- C6.2 For the operational phase, a Transport Strategy for the wider STDC site (within which the proposed development is located) is currently in development and will be delivered in accordance with the principles of the SPD [7] and adopted South Tees Regeneration Masterplan [8]. Where possible, the proposed development will be expected to meet the principles of this strategy.
- C6.3 The vision for the wider regeneration site is for it to become an exemplar, world class industrial park that is renowned as a destination for manufacturing excellence. To achieve the vision, the Transport Strategy has agreed eight outcomes with the Transport Steering Group that the STDC site should aim to deliver. The outcomes are:
- 1 A range of high-quality transport options, which are all inclusive, accessible, fast, frequent, convenient, affordable, reliable, safe and resilient;
 - 2 High quality public transport, walking and cycling routes and connections are prioritised over other transport modes;
 - 3 The site should not be dominated by cars and other vehicles or severed from local areas by transport infrastructure;
 - 4 Transport connections with local, inter-regional, national and international transport networks for people and goods are seamless and will attract developers / investors to the site;
 - 5 Cycling and walking connections to local residential centres are safer, more attractive, widely used and support local town centre regeneration;
 - 6 Transport options enable improved individual health and wellbeing and access to jobs;
 - 7 Transport options will support the transition to zero carbon and contribute to a high-quality environment that will attract future occupiers; and
 - 8 Transport infrastructure can adapt to market demand, new transport technology and market disruptors, attracting developers / investors to the site.
- C6.4 The strategy will develop a delivery plan of interventions to meet these outcomes which is expected to include, amongst other things, limiting car parking provision, introducing mobility hubs, providing high quality cycling parking and improving public transport provision. Future occupiers of the proposed development will be expected to sign up to the Transport Strategy, where possible, to meet sustainability targets (including RCBC's ambition to be carbon neutral by 2030) and will benefit from the measures introduced to enhance the accessibility of the site. These benefits, will help to minimise the impact of development traffic and have a beneficial impact on pedestrian and cyclist amenity.

- C6.5 Adverse effects arising from the proposed development have been identified. It is, however, reasonable to suggest that the implementation of the wider STDC transport strategy will mitigate, to some extent, the impact on the surrounding highway network. The assessment undertaken as part of the EIA for this development has been undertaken based on a worst-case scenario, concentrating traffic in the south-west of the site and assuming that the majority of employees (82%) will drive to the site based on existing travel trends. The transport strategy will implement measures, as outlined in Section C6.4, to substantially reduce the 82% commuter car mode share percentage and reduce the volume of traffic generated by the proposed development. As the transport strategy is still in development, it has not been possible to quantify the reduction in car mode share that the measures would deliver and re-assess the junctions. In mitigation, it is expected that the requirement of the proposed development to adhere to the STDC transport strategy (where possible), and other measures such as a Car Parking Management Plan and Servicing Management Plan, will be conditioned through the planning process.
- C6.6 In addition, a Travel Plan Framework has been outlined in the TA and it is expected that some of the travel planning measures that can be introduced on a phased basis once development commences or is implemented, such as providing high quality cycle parking and facilities, will be conditioned, with details to be confirmed at reserved matters stage. These measures will support the transport strategy and encourage employees and visitors to travel to and from the site by sustainable models.
- C6.7 The assessment also assumes future development traffic will follow existing distributions. However, the impacts are expected to be minimised if vehicles re-route in the future due to off-site highway improvements. For example, rather than access the site via Old Station Road, traffic has an alternative route to access the site via Dockside Road, where it can access the A66 at the Cargo Fleet Lane junction. The Cargo Fleet Lane junction is currently being improved to provide additional capacity and consequently it may be more attractive to use Dockside Road and the improved Cargo Fleet Lane junction to access the site from the A66.
- C6.8 A previous Arup study [11] raised capacity issues at the A66/Tees Dock Road roundabout, and the Future Baseline assessment indicates that the junction is approaching capacity without the addition of development traffic. Existing issues at the junction, that may be exacerbated by the development, will need addressing as part of the wider STDC strategy. In the interim, it is expected that traffic will be permitted to travel through the site on the internal road network and use the Steel House roundabout access located at the eastern extent of the site. This will reduce traffic through the Tees Dock Road junction and minimise the impact at the A66/Tees Dock Road junction.

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.

C7.2 There may be a temporary residual adverse effect on driver delay at the A66/Old Station Road/Middlesbrough Road junction, but this will be minimised through the development of a CTMP.

During Operation

C7.3 The effects, and any residual effects, of the proposed development are summarised in Table C7.1. In EIA terms, it is not expected that any residual effects will be significant.

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

Receptor	Potential effect	Mitigation	Residual Effect
Dockside Road	Minor adverse effect on severance	None identified - Dockside Road provides the main access into the site.	Minor adverse
Old Station Road	Moderate adverse effect on severance	Upgrade to A66/Cargo Fleet Lane junction could see some traffic re-route via Dockside Road. Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline.	Minor adverse
Middlesbrough Road	Moderate adverse effect on severance	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline.	Minor adverse
A66/Old Station Road/ Middlesbrough Road roundabout	Moderate adverse effect on driver and bus user delay	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline.	Minor adverse
A66/Tees Dock Road/A1053 roundabout	Moderate adverse effect on driver delay	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to also be provided with an alternative access via Steel House roundabout to minimise impact on Tees Dock roundabout. STDC transport strategy to assess if additional mitigation is required.	Minor adverse
A1053/A1085 Trunk Road roundabout	Moderate adverse effect on driver delay	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to also be provided with an alternative access via Steel House roundabout to minimise impact on Tees Dock roundabout.	Minor adverse

Receptor	Potential effect	Mitigation	Residual Effect
Smith's Dock Road	Minor beneficial effect on pedestrian and cyclist amenity	None required	Minor beneficial
A1053 (T)	Moderate adverse effect on pedestrian and cyclist amenity	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic on pedestrian and cycling routes in the Future Baseline. Development traffic to be provided with an alternative access via Steel House roundabout to minimise impact on routes to/from the east of the development.	Minor adverse
A1085 Trunk Road/ A1053 roundabout	Minor adverse effect on pedestrian and cyclist amenity	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to be provided with an alternative access via Steel House roundabout to minimise impact on routes to/from the east of the development. Signalised crossings exist on some arms of the junction.	Negligible
A66/Normanby Road signalised crossroads	Minor adverse effect on accidents and safety	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

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 The effects, and any residual effects, of the proposed development are summarised in Table C8.1.

Table C8.1: Summary of Transport Effects

Receptor	Potential effect	Mitigation Measure	Residual Effect
Dockside Road	Minor, temporary adverse effect on severance during construction	Development of a CTMP	Unknown – but based on operational assessment it is not expected to be significant
Old Station Road	Minor, temporary adverse effect on severance during construction	Development of a CTMP	Unknown – but based on operational assessment it is not expected to be significant
A66/Old Station Road/ Middlesbrough Road roundabout	Adverse effect on driver delay	Development of a CTMP	Unknown – but based on operational assessment it is not expected to be significant
Dockside Road	Minor, permanent adverse effect on severance during operation	South Tees Regeneration Masterplan Transport Strategy and Travel Plan Framework.	Minor adverse - as the main access the effect is unlikely to be substantially reduced
Old Station Road	Moderate, permanent adverse effect on severance during operation	South Tees Regeneration Masterplan Transport Strategy and Travel Plan Framework.	Minor adverse – the measures should reduce forecast traffic flows
Middlesbrough Road	Moderate adverse effect on severance during operation	Travel Planning measures to be introduced to reduce development traffic in the Future Baseline.	Minor adverse - the measures should reduce forecast traffic flows and minimise the effect

Receptor	Potential effect	Mitigation Measure	Residual Effect
A66/Old Station Road/ Middlesbrough Road roundabout	Moderate adverse effect on driver and bus user delay during operation	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline.	Minor adverse – as above, the measures should reduce forecast traffic flows to minimise the impact at the junction
A66/Teas Dock Road/A1053 roundabout	Moderate adverse effect on driver delay during operation	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to also be provided with an alternative access via Steel House roundabout to minimise impact on Teas Dock roundabout. STDC transport strategy to assess if additional mitigation is required.	Minor adverse - the measures should reduce the forecast traffic flows to minimise the impact at the junction
A1053/A1085 Trunk Road roundabout	Moderate adverse effect on driver delay during operation	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to also be provided with an alternative access via Steel House roundabout to minimise impact on Teas Dock roundabout.	Minor adverse - the mitigation measures should reduce the forecast traffic flows to minimise the impact at the junction
Smith's Dock Road	Minor beneficial effect on pedestrian and cyclist amenity during operation	None required	Minor beneficial
A66/Teas Dock Road/A1053 roundabout	Negligible effect on pedestrian and cyclist amenity during operation	None required	Negligible
A1053 (T)	Moderate adverse effect on pedestrian and cyclist amenity during operation	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic on pedestrian and cycling routes in the Future Baseline. Development traffic to be provided with an alternative access via Steel House roundabout to minimise impact on routes to/from the east of the development.	Minor adverse - the mitigation measures should reduce the forecast traffic flows on this link

Receptor	Potential effect	Mitigation Measure	Residual Effect
A1085 Trunk Road/A1053 roundabout	Minor adverse effect on pedestrian and cyclist amenity during operation	Travel Planning measures, alongside a Servicing Management Plan, should reduce the impact of development traffic in the Future Baseline. Development traffic to be provided with an alternative access via Steel House roundabout to minimise impact on routes to/from the east of the development. Signalised crossings exist on some arms of the junction.	Negligible - the mitigation measures should reduce the forecast traffic flows on this link with the changes expected to be imperceptible to users
A1053 Greystones Road/A174 roundabout	Negligible effect on pedestrian and cyclist amenity during operation	None required	Negligible
A66/Old Station Road/ Middlesbrough Road roundabout	Negligible effect on accidents and safety	None required	Negligible
A66/Normanby Road signalised crossroads	Minor adverse effect on accidents and safety	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
A66/Eston Road/Church Lane signalised crossroads	Negligible effect on accidents and safety	None required	Negligible

- C8.5 As shown in Table C8, any significant effects arising from the proposed development during construction have not been identified as a detailed assessment of construction traffic has been scoped out at this stage.
- C8.6 Overall, Table C8 shows that the proposed development results in some minor adverse residual effects and one minor beneficial effect during operation.
- C8.7 Where adverse effects have been identified, the STDC transport strategy, currently in development, will consider if any additional mitigation at these locations is required once other measures introduced as part of the strategy have been considered.
- C8.8 In EIA terms, it is not expected that any residual effects will be significant.

C9.0 **Abbreviations & Definitions**

CEng	Chartered Engineers
CEnv	Chartered Environmentalist
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 Ove Arup & Partners Ltd (2019) Joint Strategic Transport Needs Assessment for Middlesbrough and Redcar & Cleveland Councils