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Proof of Evidence of Dan Aylward-Mills MSc MA (Hons)

The South Tees Development Corporation Compulsory Purchase Order

Acquiring Authority: South Tees Development Corporation
January 2020

STDC7/2

Contents

1.0	Qualifications and Experience	3
	Qualifications	3
	Experience	3
2.0	Scope and Structure of Evidence	5
	Terminology	5
	Instructions	5
	Documents relied upon	6
3.0	STDC and the Scheme	9
	STDC	9
	Keep safe	10
	The Scheme	12
	The land	14
4.0	Will the Scheme create economic benefits in the public interest?	16
	What are the expected benefits of the scheme?	16
	Does the scheme contribute to national and subnational economic objectives?	19
	How should economic benefits be measured?	23
	Social cost-benefit-analysis of the Scheme	26
	Should regional economic benefits be taken into consideration?	30
	Will there be additional regional economic benefits?	34
5.0	What are the key assumptions underpinning the benefits?	37
6.0	Are the assumptions which underpin the estimated economic benefits valid?	38
	Are the assumptions on Scheme costs valid?	38
	Are the assumptions on Scheme revenues valid?	40
	Does STDC have access to sufficient funding to implement the Scheme?	46
	Will the Scheme generate additional jobs in the region?	51
	Summary	55
7.0	The Viability of the Scheme if the Order Land is not brought under comprehensive control	56
	Attracting new investment by maximising agglomeration benefits	56
	A strong brand	60
	Aesthetics and safety	61
	Benefits of comprehensive ownership for securing Freeport status	62
	Comprehensive ownership is required for the financial viability of the Scheme and to maximise the regional benefits	63
8.0	Conclusion	64

	Will the Scheme create economic benefits in the public interest?	64
	What are the key assumptions underpinning the expected benefits?	65
	Are there any risks associated with these assumptions which might make the Scheme unviable or fail to deliver public benefits?	66
	Would the Scheme, and the public interest benefits, be viable without the acquisition of the whole Order Land?	67
9.0	Documents Relied upon	68

Glossary of Terms and Abbreviations

ANPR	Automatic Number Plate Recognition
Avison Young	Avison Young (UK) Limited
BEIS	The Department for Business, Energy and Industrial Strategy
CBA	Cost-Benefit Analysis
Clean Growth Strategy	HM Government (2017): The Clean Growth Strategy: Leading the way to a low carbon future
Colliers	Colliers International Property Consultants Limited
Deadweight	Economic benefits which would have occurred without the Scheme
Direct jobs	Jobs created directly by investments in the STDC Area as a result of the Scheme
Displacement	Economic activity created as a result of the Scheme, but which results in a decrease in economic activity elsewhere in the UK, for example an employee that leaves a vacant job in one company to fill a direct job created by the Scheme
FDI	Foreign Direct Investment
Freeport	An area within a country's territorial area but considered outside of the country's customs border, sometimes referred to as 'Free Zones', 'Special Economic Zones' or 'Free Trade Zones'.
GDP	Gross Domestic Product
Green Book	HM Treasury (2018) The Green Book: Central Government Guidance on Appraisal and Evaluation
GVA	Gross-value added
Heseltine Report	Heseltine (2016): Tees Valley: Opportunity Unlimited (CD/D/6)
Indirect jobs	Jobs created through the supply chain as a result of increased economic activity on the STDC area
Industrial Strategy	HM Government (2017): Industrial Strategy: building a Britain fit for the future
IRR	Internal Rate of Return
Lichfields	Nathaniel Lichfields & Partners Ltd
Master Plan	Updated South Tees Regeneration Master Plan, November 2017 (CD/f/2)
MHCLG	Ministry of Housing, Communities and Local Government
Optimism bias	The tendency for costs of delivering public investment programmes to overrun initial estimates
Optimism bias adjustment factor	A percentage used to uplift estimated costs of public investment programmes to account for optimism bias
OR	Official Receiver
Order	South Tees Development Corporation (Land at the former Redcar Steel Works, Redcar) Compulsory Purchase Order 2019
Order Land	The approximately 1,752 acres of land subject to the Order
Scheme	STDC redevelopment programme for the STDC Area which aims to create 20,000 jobs in the Tees Valley
Statement of Case	The Statement of Case of the Acquiring Authority (CD/A5)
SSI	Sahaviriya Steel Industries
STDC	South Tees Development Corporation
STDC Area	The 4,500 acres within the administrative boundaries of STDC.
TVCA	Tees Valley Combined Authority
Vivid Economics	Vivid Economics Ltd

Declaration

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

1.0 **Qualifications and Experience**

Qualifications

- 1.1 My name is Dan Aylward-Mills and I am the Head of Growth and Development at Vivid Economics Ltd ("Vivid Economics"). I have a Master of Science in Economics for Development and a Master of Arts in Economics and Management from the University of Oxford.

Experience

- 1.2 I am professional economic consultant with ten years of experience in analysing and advising on economic policy. I specialise in analysing business performance, the barriers to trade and investment and the ways in which government can improve the competitiveness and incentivise business investment at the regional, national and subnational level.
- 1.3 I joined Vivid Economics as an Engagement Manager in May 2017. I am Head of the Growth and Development practice group, where I lead projects focusing on economic appraisal, and investment and trade promotion. Prior to joining Vivid Economics, I worked as a Senior Manager and macro and development economist at KPMG LLP, where I was responsible for managing projects on economic modelling, forecasting and policy, as a Senior Industrial Development Officer for the Government of Lesotho, responsible for developing the country's investment policy, and as an intern at HM Treasury.
- 1.4 I have worked on economic development, investment and trade promotion strategies (including special economic zones), business case development and policy proposals on behalf of Local Enterprise Partnerships and Combined Authorities across the UK and with national government, including the North East Local Enterprise Partnership, the Tees Valley Combined Authority, New Anglia Local Enterprise Partnership, the Federation of Small Businesses, the Land Registry, the British Business Bank, UK Export Finance, the Department for International Trade, the Department for Business, Environment and Industrial

Strategy, the Department for International Development and the Foreign and Commonwealth Office. I have worked with UK headquartered financial institutions to strengthen their approach to economic forecasting, and with companies in the consumer goods, energy, and automotive sectors to understand the impact of economic and policy changes on their business models. Internationally, I have worked on private sector development strategies and investment promotion strategies with the World Bank (International Finance Corporation), United Nations Development Programme, the African Development Bank, the Inter-American Development Bank, and the Governments of Bangladesh, Belize, Lesotho, Pakistan, Qatar, Senegal, and Uganda.

2.0 **Scope and Structure of Evidence**

Terminology

- 2.1 In my proof of evidence references are made to the core documents, by the abbreviation, for example, “CD/A1”. Other proofs are referred to by their document number, for example “STDC 1/1”.
- 2.2 When referring to areas of land, I use the following terminology:
- 1 “the Order Land” refers to the approximately 1,752 acres of land subject to the Order
 - 2 “the STDC Area” refers to the 4,500 acres within the administrative boundaries of STDC.
- 2.3 As discussed in Section 3.11, “the Scheme” refers to the implementation of the Master Plan.
- 2.4 All future values quoted in this report are in real terms, that is, excluding the impact of inflation, unless otherwise noted.

Instructions

- 2.5 My instructions are to:
- 1 Review the evidence provided to me, in particular the South Tees Regeneration Master Plan (“the Master Plan”) and a cash flow model prepared by the South Tees Development Corporation (“STDC”), and identify whether the proposed Scheme is likely to create economic benefits in the public interest.
 - 2 Identify the key assumptions which underpin these economic benefits.
 - 3 Identify whether there are any risks associated with these assumptions which might make the Scheme unviable or fail to deliver public benefits.
 - 4 Consider the extent to which the Scheme, and the public interest benefits, would be viable without the acquisition of the whole Order Land.
- 2.6 I have not been asked to consider:

- 1 The funding available to STDC to invest in the regeneration (this instead being considered by Gary Macdonald, Director of Finance at STDC).
- 2 The specific costs of regeneration and forecast revenues.

Documents relied upon

2.7 My evidence should be read in conjunction with the Proofs of Evidence prepared by:

- 1 Mr David Allison (STDC) whose evidence explains STDC's powers and duties to secure the regeneration of the Order land and how it is has acted reasonably and properly in exercising its powers to instigate the compulsory purchase of the Order land (STDC 1/2);
- 2 Mr John McNicholas (STDC) whose evidence covers the objectives and importance of regenerating the area in accordance with the South Tees Regeneration Master Plan (STDC 2/2);
- 3 Mr Gary McDonald (Tees Valley Combined Authority, "TVCA") whose evidence demonstrates the financial standing of STDC (as the acquiring authority) and the funding commitments in place to acquire the CPO land (STDC 3/2);
- 4 Mr Michael King (Avison Young) whose evidence demonstrates the efforts made by STDC to acquire the Order land through negotiation (STDC 8/2);
- 5 Mr. Guy Gilfillan whose evidence demonstrates the demand in the industrial sector to deliver the Scheme. It also explains how the delivery of development in a comprehensive manner, in line with the Master Plan, is important to the marketing of the STDC Area (STDC 5/2);
- 6 Mr John Knowles (Colliers) whose evidence demonstrates the viability of the Scheme from a funding and investment perspective (STDC 6/2); and
- 7 Mr Anthony Greally (Lichfields) whose evidence demonstrates that there are no obvious reasons why planning permission might be withheld for developments that would deliver the Scheme (STDC 4/2).

2.8 In addition to the other Proofs of Evidence listed above, I have relied upon documents supplied to me by South Tees Development Corporation and their advisors, as well as data, studies and reports published by reputable organisations and experts. I have referenced these documents where they have been relied upon. Unless explicitly stated, I have not sought to validate the accuracy of the information relied upon. The documents relied upon include:

- 1 The Statement of Case of the Acquiring Authority (“the Statement of Case”) (CD/A5)
- 2 The Master Plan (CD/F2)
- 3 Academic, government and industry reports and studies, official and subscription data on economic indicators and investment. These sources are listed in Section 9.0.
- 4 A cash flow model prepared by South Tees Development Corporation for the Scheme and summarised in Appendix 3 to the Proof of Evidence of Gary MacDonald, STDC 3/3.

Structure

2.9 My evidence relates to the public benefits and viability of the proposed regeneration Scheme pursuant to the Master Plan. For the purposes of carrying out STDC’s functions, STDC has made the South Tees Development Corporation (Land at the former Redcar Steel Works, Redcar) Compulsory Purchase Order 2019 (“the Order”).

2.10 My evidence covers:

- 1 Section 3.0 covers my understanding of STDC, its Keep-Safe liabilities, the Scheme and the land.
- 2 Section 4.0 reviews the evidence provided to me to determine whether the Scheme will create economic benefits in the public interest, in line with Part 1 of my instructions (listed in Section 2.5)

- 3 Section 5.0 identifies the key assumptions which underpin the delivery of the economic benefits identified in Section 4.0, in line with Part 2 of my instructions (listed in Section 2.5)
- 4 Section 6.0 assesses the risks associated with the assumptions identified in Section 5.0 and whether these undermine the economic viability of the Scheme or its ability to deliver economic benefits in line with the public interest, in line with Part 3 of my instructions (listed in Section 2.5)
- 5 Section 7.0 considers whether the Scheme would be viable should STDC fail to secure all of the Order Land, in line with Part 4 of my instructions (listed in Section 2.5)
- 6 Section 8.0 provides my conclusions.

3.0 STDC and the Scheme

STDC

- 3.1 Section 2 of the Statement of Case (CD/A5) sets out the background to the establishment of STDC: *“STDC is the first Mayoral Development Corporation to be formed outside of London. It was created by the then Secretary of State for Communities and Local Government pursuant to section 198 of the 2011 Act in August 2017 at the request of Tees Valley Combined Authority and was established by The South Tees Development Corporation (Establishment) Order 2017 (SI2017/718). STDC’s objective is to secure the regeneration of the STDC Area, focusing on the promotion of the long term sustainable economic prosperity and commercial development of Tees Valley, by converting assets in the STDC Area into opportunities for business investment and economic growth.”*
- 3.2 Section 2.3 of the Proof of Evidence of David Allison (STDC 1/2) describes the link between the closure of the Sahaviriya Steel Industries (SSI) Steelworks and the establishment of the STDC: *“Its establishment was borne out of one of the key recommendations of the Lord Heseltine endorsed report ‘Tees Valley: Opportunity Unlimited’ which was commissioned following closure of the SSI Steelworks on South Tees, in October 2015.”*
- 3.3 Section 2.3 of the Proof of Evidence of David Allison (STDC 1/2) describes the objectives of the STDC: *“The objectives of the Corporation are to:*
- further the economic development and regeneration of the South Tees area, so that it becomes a major contributor to the Tees Valley economy and the delivery of the Tees Valley’s Strategic Economic Plan;*
 - attract private sector investment and secure new, additional, good quality jobs, accessible to the people of the Tees Valley;*
 - transform and improve the working environment of the Corporation area, providing good quality, safe conditions for the workforce and wider community;*

- *contribute to the delivery of the UK Industrial Strategy, by supporting the growth of internationally competitive industries with access to global markets, taking a comprehensive approach to redevelopment at a scale that enables the realisation of an international-level investment opportunity.”*

Keep safe

- 3.4 Sections 2.7 - 2.9 of the Proof of Evidence of David Allison (STDC 1/2) describes the costs involved in keeping the ex-SSI Steelworks land safe: *“When SSI entered liquidation, the production assets were not decommissioned in a structured, methodical manner. This has left material in tanks and vessels in the by-products plants and pipelines. In addition, there is historic material in some tanks from pre-liquidation days and in some areas, there is residue remaining in gullies and drainage systems. Much of the assets have been cannibalised over the years to effect repairs elsewhere and little or no associated documentation was left on site upon closure. The overall result is that [South Tees Site Company, STSC] and ultimately myself, are now responsible for a site with inherent safety, health and environmental challenges.*
- 3.5 *Given this perilous situation described, ‘do nothing’ was not an option afforded to the UK Government following the closure of SSI. Following a programme of ‘make safe’ activities on the site immediately after the SSI closure to bring the plant and related assets to a controlled and safe stop; STSC was established to manage the ‘keep safe’ stage of site management. As CEO of STSC, I have overarching responsibility for managing this programme.*
- 3.6 *‘Keep safe’ has continued since STSC were established in December 2016 and is designed to maintain the site and assets in a safe condition until decommissioning/regeneration activity reduces the [Control of Major Accident Hazards, COMAH] threshold.”*
- 3.7 Section 3.3 of the Proof of Evidence of David Allison (STDC 1/2), describes the agreement between STDC and the Official Receiver (“OR”) which created a “Keep

Safe” liability for STDC: *“A management agreement signed by STSC and the OR allowed the OR, from 1 December 2016, to cease site management. Under the terms of that agreement, the Government funds the Keep Safe costs which amount to approximately £44m to date and around £16m per annum going forward until a permanent solution is found for the SSI-IL land.”*

3.8 Section 2.15 of the Proof of Evidence of David Allison (STDC 1/2) describes the Invest to Save funding commitment made by the Department for Business, Energy and Industrial Strategy (BEIS): *“With an annual cost to keep the site safe under the COMAH status running at approximately £16m, BEIS has approved the funding for an ‘Invest to Save’ project valued at £49m, that will see the removal of all Top Tier COMAH materials from the South Bank Coke Oven by-products plant, the Coke Oven Gas Main, the Heavy Fuel Oil Main and storage tanks and the Redcar Coke Oven by-products plant. Funding agreed by BEIS covers the keep safe costs, and is discussed further within my colleague Gary Macdonald’s proof [STDC3/2].”*

3.9 Finally, Sections 2.18 and 2.19 of the Proof of Evidence of David Allison (STDC 1/2) define and describe the ‘Tier 3’ costs: *“Since the closure of SSI, HM Government has invested and approved an enormous amount of funding for the site, totalling £221m. This includes the Task Force, Make Safe, Keep Safe and ongoing STSC running costs through to the end of 2022, the Invest to Save programme and funding of early safety-led actions to remove particular assets from site that have deteriorated to a point where they are unsafe, or in a number of cases, of imminent collapse; identified as ‘Tier 3’ intervention projects, (Tier 1 = make safe, Tier 2 = keep safe).*

3.10 *As the site continues to deteriorate and STSC’s understanding of the issues faced develops, the list of potential Tier 3 activities continues to grow. Some of these activities make economic sense by reducing ongoing keep safe costs, but the necessity to keep the site safe continues to drive commissioning of these works. Appendix 2 [STDC 1/3] gives details of Tier 3 projects.”*

The Scheme

3.11 Section 3.1 of the Proof of Evidence of John McNicholas (STDC 2/2) describes the Scheme for which the CPO seeks to acquire the land. In summary, STDC is seeking *“to acquire land and new rights over land for the purpose of carrying out STDC's function, namely, to promote the economic growth and commercial development of Tees Valley by converting redundant and disused assets in the STDC Area into opportunities for major business investment, broadly in line with the vision, strategy and objectives of the published Master Plan proposals (‘the Scheme’). The Scheme primarily encompasses the Order Land, but it also includes other parts of the wider STDC Area.”*

3.12 As Section 3.2 of the Proof of Evidence of John McNicholas (STDC2/2) describes, *“Regeneration of the STDC Area, of which the Order Land forms part, presents a transformational development opportunity for South Tees and the Tees Valley. One of the key strengths of the STDC Area is its scale. It affords an international level opportunity to grow the economy of the Tees Valley and to significantly enhance its profile both as a UK region and a centre for industrial excellence. The opportunity to redevelop large, well-serviced areas is rare and must be capitalised upon”*. In addition to its scale, the STDC Area benefits from:

- 1 *“access to the major deep-water port facilities of PD Ports Teesport and RBT. The STDC Area could not be better located to capitalise on the unique selling points of excellent sea transport connectivity and the deepest port on the eastern coast of mainland UK”* (Section 3.3 of the Proof of Evidence of John McNicholas, STDC2/2).
- 2 *“excellent road connectivity, with the A66 East-West Trans-Pennine route commencing at its boundary, providing easy access to the A19 and A1(M) strategic North-South routes at Middlesbrough and Darlington respectively”* (Section 3.4 of the Proof of Evidence of John McNicholas, STDC2/2).
- 3 *“very good rail connectivity via the Saltburn to Darlington railway line, that passes through the Area. This provides connectivity to the East Coast Main*

Line, at Darlington, for passenger and freight rail, and to the national and international gateway of Teesside International Airport (TIA); supporting the connectivity of the Tees Valley to global markets” (Section 3.5 of the Proof of Evidence of John McNicholas, STDC2/2).

- 4 *“a large, experienced and highly skilled workforce. Many of the parties expressing interest in creating new industrial uses within the Area, that STDC has engaged with, have quoted the availability of an abundant, highly-skilled, indigenous labour market within the area as a key attribute of the location; along with the greater potential that exists for both upskilling and diversification into other manufacturing skills” (Section 3.8 of the Proof of Evidence of John McNicholas, STDC2/2).*
- 5 *“To the immediate south of the Area lies the major power and chemicals complex of Wilton International, which is home to several major industrial businesses, including Sembcorp, a company which, in addition to owning and managing the estate, is engaged in large-scale power generation operations on the Wilton site” (Section 2.8 of the Proof of Evidence of John McNicholas, STDC2/2).*
- 6 *“a major UK hub for advanced manufacturing, with a sector and supply chain made up of a wide range of firms of all sizes, and a track-record of attracting strategically important multi-national companies to the area. The Tees Valley has maintained its historically strong position in various key sectors, such as power generation, chemicals, and oil & gas, while evolving and adapting to capitalise on new business growth opportunities in offshore wind, carbon capture and storage, the hydrogen economy, and offshore fabrication decommissioning” (Section 2.42 of the Proof of Evidence of John McNicholas, STDC2/2).*

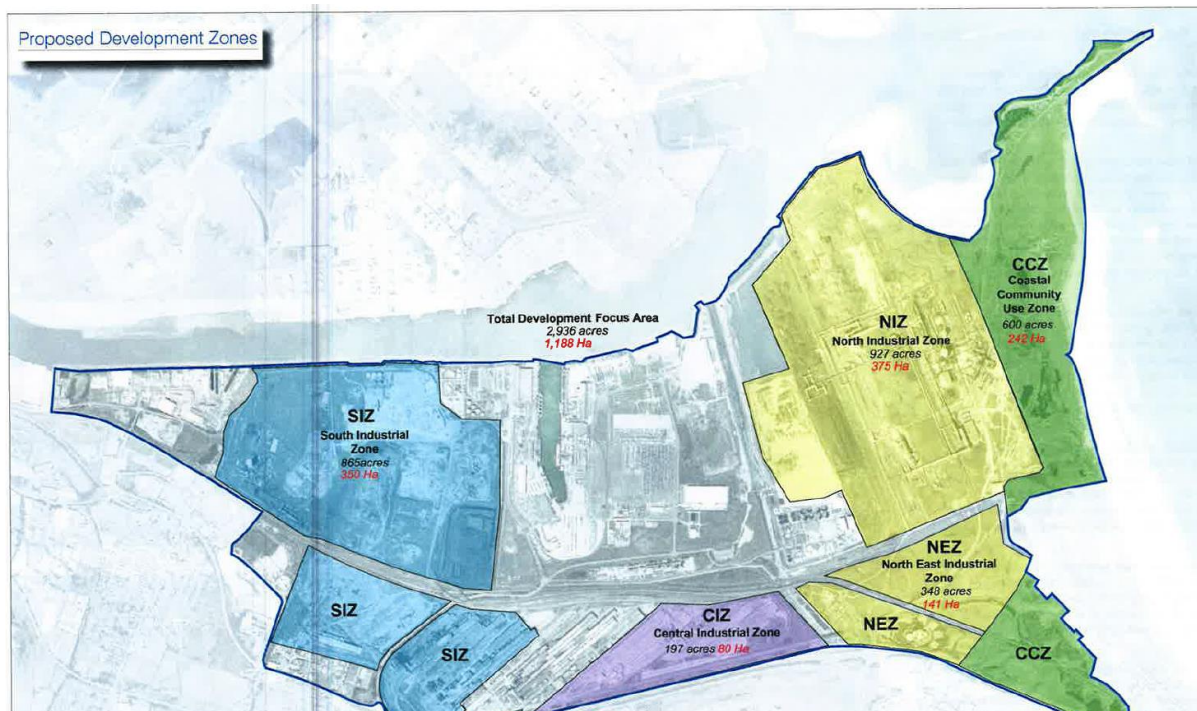
3.13 STDC aspires to create *“a truly integrated industrial and manufacturing zone, benefitting from optimally-designed transport and utilities networks, and careful*

consideration over land-use allocations and site selection (Section 4.5 of the Proof of Evidence of John McNicholas), STDC2/2).

The land

- 3.14 As set out in Section 3.7 of the Proof of Evidence of David Allison (STDC 1/2), the Master Plan “*provides a long-term flexible framework of redevelopment for some 2,300 acres of land for industrial purposes and enhancement and management of a further 600 acres of environmentally-designated assets within the overall 4,500-acre footprint of the Corporation’s constituted boundary*”.
- 3.15 As discussed in Section 3.11, above, the Scheme covers both the Order Land and the wider STDC Area. In modelling the costs and revenues of the Scheme, it is therefore important to understand the planned redevelopment, associated costs and expected revenues for the whole Scheme, not just those associated with the Order Land.
- 3.16 The Master Plan identifies four industrial zones which will be redeveloped with the aim of attracting industrial occupiers. As set out in Sections 4.9 – 4.23 of the Proof of Evidence of John McNicholas (STDC2/2), each of these industrial zones is designated for different types of industrial activity. Figure 1, below, shows the STDC Area and the four planned industrial zones, which together account for the 2,336 acres referred to by David Allison, in addition to the 600 Coastal Community Use Zone.

Figure 1 - The STDC Area showing the four industrial zones



Source: Master Plan (CD/F2, Page 79)

3.17 The Order Land comprises approximately 1,752 acres. I understand from discussions with STDC that this differs from the aggregation of the zones in Figure 1 in that the Order Land:

- 1 excludes the Redcar Bulk Terminal and the former ICI landfill from the North Industrial Zone
- 2 excludes much (though not all) of the Central Industrial Zone
- 3 excludes all of the Coastal Community Use zone

3.18 The costs of the Scheme estimated by STDC, and included in Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, include certain costs for connecting Redcar Bulk Terminal to the Infrastructure Corridor, and also include certain costs associated with development of the Coastal Community Use Zone.

4.0 **Will the Scheme create economic benefits in the public interest?**

4.1 In this section, I review the evidence provided to me to determine whether the proposed Scheme will generate economic benefits in the public interest, in line with Part 1 of my instructions.

4.2 I first provide a summary of the expected benefits of the Scheme based on the Proof of Evidence of John McNicholas (STDC 2/2). I then consider whether the Scheme will contribute to national and local economic objectives. I summarise the approach recommended by HM Treasury to economic appraisal of projects and undertake a social cost-benefit analysis of the Scheme from the national perspective. Finally, I review the performance of the regional economy to determine whether there is a case for considering regional economic benefits in the appraisal of the Scheme, and undertake a social cost-benefit analysis from the regional perspective.

What are the expected benefits of the scheme?

4.3 Section 3.20 of the Proof of Evidence of John McNicholas (STDC 2/2) sets out the expected benefits of the Scheme:

4.4 *“In particular, the Scheme will deliver significant regeneration benefits to South Tees and the wider Tees Valley, which I consider massively outweigh any potential disbenefits brought through confirmation of the Order. The benefits include:*

Economic

- *Based on initial estimates, and through the delivery of the Master Plan objectives and related development densities, the creation of up to 20,000 new jobs.*
- *A shift in employment focus towards higher skilled sectors and occupations, centred on manufacturing innovation and advanced technologies, and those industries best able to deliver sustained economic*

prosperity for the Tees Valley and its people, while realising a jobs spectrum that offers opportunities for all.

- Through the shift in jobs typology, a raising in the average wage in the Tees Valley to a level much closer to the UK national average (presently at around 80% of the UK national average).*
- The generation of an additional minimum Gross Value Added (GVA) figure into the Tees Valley economy of £1.0 billion per annum.*
- The creation of a high value, low carbon, diverse and inclusive circular economy for the Tees Valley, that is optimally positioned to deliver sustained economic growth long into the future.*
- Expansion in deep-water port facilities on the River Tees through the development of a further 2.0 kilometres (1.2 miles) of new berthing capacity, not just to serve the STDC Area, but the wider Tees Valley and further afield.*
- The creation of 25 miles of new, modern highways infrastructure, and up to 30 miles of freight railway infrastructure improvements.*
- Major opportunities for lower cost, on-site power generation and provision into an Area-wide private wire network, serving new large power consumers, where resilience of supply and economically viable power purchasing is key.*
- Improved accessibility to Teesport, the sixth largest port in the UK (based on most recent statistics).*
- Reinforced links with Wilton International and other major industrial operations in the South Tees area, augmenting and supporting their own economic growth plans.*
- A strengthened profile of the Tees Valley in the global marketplace as a major UK destination for industry, innovation and manufacturing excellence.*

Social and Community

- *Major opportunities for a step change in the learning and skills agenda in the Tees Valley, working with educational institutions and local training providers to plan and deliver an appropriately skilled workforce, ensuring the employees of the future have the skills necessary to access employment in areas of new and emerging technologies within the advanced manufacturing, energy, and renewables sectors, linked to the establishment of clear targets for job creation, improving skills attainment, and the recruitment of local labour, with a key objective being the retention of local talent.*
- *Improved transport infrastructure across all modes, providing better connectivity to local towns, and enabling local people to more easily access new employment opportunities on South Tees.*
- *Improved connectivity with Redcar town centre, increasing footfall, boosting the town's economy, and enabling overall town centre regeneration.*
- *Growth in local businesses across many sectors, through the increased economic activity in the locale, benefitting supply chain service providers and the wider service sector.*
- *An enhanced destination profile and brand for the STDC Area, Redcar and the wider Tees Valley, both nationally and internationally, at the same time enabling an improved leisure and tourism offer.*
- *The provision of opportunities for improved leisure and amenity through the creation of a high-quality large-scale destination that incorporates an appropriate compliment of public realm and community uses, including the improvement and bringing back into more beneficial use, existing public rights of way and coastal assets, augmented by the retention of industrial heritage features, creating a genuine sense of place on South Tees, where*

industry, community uses and environmentally-designated spaces co-exist and are successfully integrated.

Environmental

- *Environmental improvement to around 2,300 acres (920 hectares) of derelict, former industrial brownfield land.*
- *Decontamination and demolition of an extensive array of redundant, hazardous industrial assets with the materials arising therefrom being recycled.*
- *Establishment of industrial end uses that fit within a low carbon and circular economy, embracing opportunities for carbon capture, utilisation and storage (CCUS).*
- *Clean energy generation on a major scale and ‘Clean Growth’ in the economy, reducing industrial pollution, ensuring long-term environmental sustainability.*
- *Ecological habitat mitigation and improvement, creating new bio-diversity habitats and habitat corridors, and the implementation of sustainable, long-term habitat management strategies.*
- *The creation of high quality public open spaces and strategic landscaping, as part of an integrated, Area-wide strategy.”*

Does the scheme contribute to national and subnational economic objectives?

- 4.5 In this section, I review key national and local government documents to determine whether the Scheme is likely to contribute to national and regional economic objectives.

The Scheme supports the Government in its Clean Growth objectives

- 4.6 The UK Government’s National Industrial Strategy White Paper (“the Industrial Strategy”, CD/D10) sets out four ‘grand challenges’, including ‘clean growth’. The

Industrial Strategy places at the core of its strategy that the UK must take advantage of the prospects for low-carbon growth and proposes using carbon capture, use and storage as well as renewable energy to achieve this goal. The most recent BEIS single departmental plan (DAM 3) retains this focus on clean growth, making the case that developing world leading sectors can help achieve the 7th Sustainable Development Goal of ensuring access to affordable, reliable, sustainable and modern energy for all. In addition, the Government's Clean Growth Strategy ("the Clean Growth Strategy", DAM 4) argues that the UK's early success in developing low carbon industries is in part based on a regulatory framework that *"provides long-term direction and support for innovation and excellence in the design and manufacturing of leading-edge technology."*

- 4.7 In my opinion, the proposed Scheme, which emphasises *"a high value, low carbon, diverse and inclusive circular economy for the Tees Valley"* (Proof of Evidence of John McNicholas, STDC 2/2, Section 3.20) is therefore expected to contribute to the Government's objectives for clean growth, as set out in the Industrial Strategy and Clean Growth Strategy. The Proof of Evidence of Guy Gilfillan (STDC 5/2, Section 6.10) identifies a number of clean energy projects that are expected to be in the STDC area, including the £5 billion Clean Gas Project which *"comprises a 3GW Closed Cycle Gas Turbine (CCGT) power generation facility with 100% carbon capture, utilisation and/or sequestration/storage (CCUS)"*, and plans to *"establish a new, 200-acre (81 ha) offshore wind base on the South Industrial Zone within the STDC area"*.

The Scheme supports the Government's objectives to grow key manufacturing sectors

- 4.8 The Industrial Strategy emphasises the importance of the manufacturing sector in delivering economic growth, recognising it is *"crucial to the economy"* (CD/D10, page 183). It highlights the work of the High Value Manufacturing Catapult, established in 2012: *"It has established a strong track record of helping UK manufacturing businesses of all sizes connect better with their customers and supply chains and boost their competitiveness by applying new technologies that*

enable faster and cheaper production of products and components. Its work is not only anchoring production in the UK, it is also helping to re-shore manufacturing lost to other countries and winning the high value inward investment projects that create jobs and local growth." (CD/D10, page 82). In support of the Industrial Strategy, the Government has established a number of sector deals – partnerships between industry and government on sector-specific issues. Sector deals cover a number of key manufacturing sectors, including the aerospace, automotive, life sciences, and offshore wind (DAM 42). The UK Export Strategy seeks to align resources to these sector deals (DAM 43 page 68).

- 4.9 In my opinion, the proposed Scheme, which emphasises investment in manufacturing, (Proof of Evidence of John McNicholas, STDC 2/2, Section 3.17) will contribute to the Government's objective of growing the manufacturing sector.

The Scheme is aligned with recommendations by Lord Heseltine in a report commissioned by the Chancellor of the Exchequer

- 4.10 When Sajid Javid, the current Chancellor of the Exchequer, was Secretary of State for Business, Innovation and Skills, he commissioned an independent report from Lord Heseltine to support investment in the Tees Valley ("the Heseltine Report", CD/D6). The report supports the local government initiatives, including the swift establishment of STDC and the transfer of control over the SSI site to STDC. It recommends STDC "*creates an ambitious strategy for the area within a year of the publication of this report*" (page 5). In my opinion, the Scheme aligns with the recommendations of the Heseltine Report.

The Scheme Delivers on the regeneration policy of the Northern Powerhouse

- 4.11 Through the Northern Powerhouse strategy (DAM 5), the Government is committed "*to achieve a sustained increase in productivity across the whole of the North*" (page 5). The strategy aims at harnessing the long history of the North in driving national growth, dating back to the industrial revolution, and building on the existing economic strength of the region: manufacturing, pharmaceuticals, energy and the digital economy. It commits the government to "*continuing to build international*

understanding of the 'northern offer' to increase the number of foreign direct investment projects that land in the region, and the number of companies that successfully export from the region" (page 21).

- 4.12 The Proof of Evidence of John McNicholas (STDC 2/2, Section 7.7) explains that *"Should the Order be confirmed, and by virtue of the extensive preparatory work undertaken to date, and the public sector funding already secured, STDC is ready and committed to bring forward a progressive, phased programme of enabling works to facilitate inward investment, secure new industrial end-users and thereby deliver the Scheme and all of the economic, social, community and environmental benefits and outputs set down within the Master Plan and this Proof."* In my opinion, the Scheme will make a significant contribution to the Government's objectives with respect to the Northern Powerhouse, by redeveloping a major site with quality infrastructure and good transport connectivity with the aim of attracting inward investment.

The Scheme makes a significant contribution to the objectives of the Tees Valley Combined Authority (TVCA)

- 4.13 The Tees Valley Strategic Economic Plan 2016-2026 (CD/D7) sets out TVCA ambitions to add £2.8 billion to the regional economy alongside 25,000 additional jobs (Page 1). The Scheme, which seeks to create an additional 20,000 in Tees Valley, will make a significant contribution to the objectives of TVCA.

Summary

- 4.14 I have reviewed key documents which set out the objectives of the UK Government (including the Industrial Strategy, Clean Growth Strategy and Northern Powerhouse Strategy) and Tees Valley Combined Authority (specifically the TVCA Economic Plan). My conclusion is that the Scheme strongly aligns with both national and regional objectives, specifically by:

- 1 Emphasising investment in clean energy and growth;
- 2 Promoting investment in the manufacturing sector;
- 3 Promoting investment in the North of England;

- 4 Promoting investment and creating jobs in the Tees Valley following the closure of the SSI Steelworks.

How should economic benefits be measured?

- 4.15 There are different approaches recognised for assessing and quantifying benefits from redevelopment Schemes. These are described in the following paragraphs.
- 4.16 HM Treasury's 2018 Green Book ("the Green Book", DAM 1) provides guidelines for appraising policies, programmes and projects. The Green Book (Section 5.3) recommends that Social Cost Benefit Analysis ("CBA") should be used to assess the impact of different options on social welfare (Section 5.2).
- 4.17 The relevant costs and benefits are those to UK society overall (Section 5.7), and therefore include the costs and benefits to the public sector and to wider UK society, including households, individuals and businesses (Box 7). Benefits to the public sector include direct public sector benefits to the originating organisation (STDC), and indirect public sector benefits (to other public sector organisations). These specifically include cash releasing benefits for the public sector, for example any cash surplus which STDC generates from the Scheme.
- 4.18 The Green Book notes that sunk costs – expenditure or payments already incurred – should be excluded from the appraisal of social value. "*What matters are costs and benefits affected by decisions still to be made*" (Section 5.17).
- 4.19 The Green Book emphasises that market prices should be used for estimating both costs and benefits (Sections 5.16 and 5.29).
- 4.20 The appraisal of social value involves the calculation of Benefits Cost Ratios ("BCRs") – the ratio of benefits to costs – and Net Present Social Value ("NPSV") – the present value of benefits less costs, as appropriate to the intervention being considered (Section 5.7).
- 4.21 The Green Book requires that future costs and benefits should:

- 1 Be estimated in 'real' terms, i.e. future prices should be adjusted to remove the impact of inflation so that they are comparable with present prices (Section 5.11)
 - 2 Be discounted to reflect that society prefers to receive goods and services sooner rather than later – the social time preference (Section 5.33). Costs and benefits accruing between years 1 and 30 should be discounted at a rate of 3.5% per annum. This means that costs and benefits arising immediately are valued at 100%, those arising in Year 1 are valued at 96.62%, and those arising in Year 30 are valued at 35.63%. After 30 years, the discount rate falls to 3%, so that costs and benefits in Year 31 are valued at 34.59% and those in Year 60 at 14.25%. These figures are set out in Annex 6 of the Green Book.
- 4.22 The above guidance suggests that one approach to assessing whether the Scheme will deliver positive economic benefits in the public interest is to compare the present value of the relevant costs of delivering the Scheme (such as the costs of demolition, infrastructure and overheads) with the present value of the relevant benefits of the Scheme (such as rent and business rates). The costs of Keep Safe are not affected by the decision whether to proceed with the Scheme and are therefore not a relevant cost.
- 4.23 The Green Book also recognises that benefits to wider society (including individuals, households and businesses) may include productivity effects, which can increase wages, and labour supply effects from increases in human capital, job search activity and better access to jobs, which can have macro effects such as increasing employment. In such cases, *“the benefits can be calculated from the different levels of total employment costs under different options”* (Sections 6.3 – 6.4). However, macro effects not resulting from productivity or labour supply, and multiplier effects (such as indirect jobs through the supply chain) are not generally counted for appraisals at the national level (6.5).
- 4.24 The Green Book does permit the inclusion of first round labour effects at the subnational appraisal, providing sufficient consideration is given to deadweight,

substitution and displacement (Section A3.6). With robust evidence, supply chain effects (such as indirect jobs) can be included in estimates of social value at the subnational level. This means that the Social CBA may be different when considering the subnational and UK-wide results.

4.25 These guidelines suggest that, if there is a good reason for considering regional economic benefits separately from national economic benefits (for example, if the Scheme is in a disadvantaged area) then it may be appropriate to consider the employment benefits. This would require an estimation of the net increase in total wages as a result of the Scheme, after accounting for deadweight, substitution and displacement.

4.26 In the past, gross-value-add (“GVA”) impacts have been used as a measure of the potential benefits of a development (The DCLG Appraisal Guide, 2016 - DAM 2). GVA considers the payments to labour (in wages) and capital (through interest on loans or dividends) generated by economic activity. This requires an estimation of the gross-value-add of the additional jobs created through the Scheme. This was based on a number of assumptions about the employment density of new developments, the regional GVA-per employee data, and the persistence of new jobs created.

4.27 The 2016 DCLG Appraisal Guide notes that the approach is now inconsistent with the guidance on monetising employment impacts and that the Department’s preferred approach to appraising a development is to use changes in land values to infer the net private impact.

4.28 In summary, in assessing whether the Scheme will generate economic benefits in the public interest, the most recent and relevant guidance can be found in HM Treasury Green Book. This suggests that a Social CBA should be undertaken, which compares the present value of the relevant costs and benefits associated with the decision to proceed with the Scheme. Where there is a case for considering separately the national and subnational impacts, the impacts on employment may also be considered and presented separately, by considering the impact on overall

wages. Approaches which attempt to estimate the impact on GVA as a result of the Scheme have been used in the past but are no longer the preferred approach.

Social cost-benefit-analysis of the Scheme

4.29 In line with the Green Book guidance summarised above, I have reviewed the projected costs and revenues associated with the Scheme.

4.30 All costs and revenues are taken from Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3. I have not independently verified these, but understand that STDC has based these upon professional advice from CH2M, an engineering company, DDM, a company specialising in demolition, and Dodds Brown, Thomas Stevenson, and Avison Young, commercial property consultancies. Costs and revenues are provided in real terms (that is, excluding the impact of inflation) for the 30-year period 2020/21 to 2049/50.

Costs

4.31 The relevant costs of the Scheme that I have identified in Appendix 3b to the Proof of Evidence of Gary MacDonald (STDC 3/3) include:

- 1 The costs of demolition (Row 35).
- 2 The costs of decommissioning and cleaning of plant and facilities (Row 36)
- 3 The costs of infrastructure (including road, railway and marine transport infrastructure and power and utilities) (Rows 37 – 40)
- 4 The costs of landscaping (Row 41)
- 5 The costs of site preparation (Row 42)
- 6 Strategic costs (Row 43).
- 7 Overheads (including site management charges once all preparation has concluded) (Row 47)
- 8 Costs of land purchase including tax and compensation (Row 49)

- 4.32 I have excluded the Keep Safe, Invest to Save and Tier 3 costs (Row 44) from the estimation of costs for the Scheme as these costs exist regardless of whether the CPO is successful and/or the Scheme is implemented, and should therefore be considered 'sunk' for the purposes of appraising the Scheme.
- 4.33 'Optimism bias' *"is the proven tendency for appraisers to be too optimistic about key project parameters, including capital costs, operating costs, project duration and benefits delivery"* (Section 2.16 of the Green Book, DAM 1). In line with Green Book guidance, I have also applied an 'optimism bias adjustment factor' to account for this tendency. The Green Book recommends applying an uplift of between 6% and 66% on capital expenditure for non-standard civil engineering projects. I have used the upper threshold and applied a capital optimism bias of 66%. This assumption is discussed further in Section 6.0
- 4.34 The relevant costs are summarised in Table 1, below. They are presented both in undiscounted real terms, and in discounted, present value.

Table 1 - Relevant costs of implementing the Scheme

Cost	Undiscounted real cost (£'000s)	Present (2020/21) Value (£'000s)
Demolition	71,957	61,092
Decommissioning/ cleaning of plant and facilities (COMAH)	13,158	11,667
Infrastructure - Highway	95,415	80,100
Infrastructure - Marine	26,000	20,793
Infrastructure - Rail	16,226	12,720
Infrastructure - Utilities (incl Elec. Infr. Provision)	77,680	65,542
Landscape and public realm	10,586	7,724
Site preparation	71,967	61,799
Capitalisable Strategic Costs	67,584	54,717
Overheads (balances Serv. Ch. & KS+I2S+T3 once prep concluded)	25,005	15,147
Assumed Land Purchase (incl. tax) & Compensation	31,572	29,473
Sub-total	507,150	420,775
Optimism bias adjustment factor (66%)	334,719	277,712
Total	841,869	698,487

Source: Appendix 1 to this Proof of Evidence (STDC 7/3)

Benefits

4.35 In line with the guidance contained in HM Treasury Green Book, I have identified the following benefits accruing from the implementation of the Scheme. These are based on Appendix 3b to the Proof of Evidence of Gary MacDonald (STDC 3/3):

- 1 Rental revenues, which accrue once the land has been redeveloped and tenants are identified (Row 15)
- 2 The STDC share of business rates (Row 16)
- 3 Service charges (Row 17)
- 4 Scrap value (Row 18).

4.36 In addition to these, I have also included the income from business rates which do not accrue to STDC. Although these are not relevant for STDC from a financial perspective, and are therefore not included in the Proof of Evidence of Gary MacDonald, they nonetheless represent an indirect public sector benefit and are therefore relevant to the appraisal of social value.

4.37 The value of these benefits is summarised in Table 2, below.

Table 2 - Relevant benefits from the Scheme

Benefit	Undiscounted real benefit £'000s	Present value (2020/21) of benefit £'000s
Rental	978,481	540,411
Business Rates	142,552	83,080
Service Charge	83,220	45,831
Scrap	23,100	16,720
Sub total	1,227,352	686,041
Business Rates accruing to RCBC [53]	142,552	83,080
Total	1,369,904	769,121

Source: Appendix 1 to this Proof of Evidence

4.38 It is important to note that these omit some potentially important benefits, including:

- 1 The benefits of demolition and decommissioning work in reducing Keep Safe, Invest to Save and Tier 3 costs.

- 2 Any benefits through higher rental values on privately owned land in the STDC Area and surrounding areas, which are likely to benefit from economic clustering and improved infrastructure.
- 3 Stamp duty, which creates an indirect monetizable public benefit.
- 4 Any social value of the investment in the Coastal Community Use Zone.
- 5 Any benefits arising after 30 years.
- 6 Any benefits arising from higher regional employment, including wages, profits and tax revenues. These are discussed below, from Section 4.44.

BCR and NSPV

4.39 The Green Book guidance recommends a calculation of the benefit-to-cost ratio (BCR) and the Net Present Social Value (NPSV). The BCR is the ratio of the present value of the societal benefits from a policy, programme or investment to the present value of the societal costs. A BCR greater than 1 indicates that the benefits are greater than the costs. The NPSV is calculated by subtracting the present value of the societal costs from the present value of the societal benefits. An NPSV greater than zero indicates that the benefits are greater than the costs. I have calculated these using both the expected costs, and the optimism-bias adjusted costs shown in Table 1.

4.40 The BCR is calculated by dividing the present value of benefits from Table 2 (£769 million) by the present value of costs from Table 1. Using the expected costs (£421 million, before optimism bias) the Scheme has a BCR of 1.8. Once the costs are adjusted to account for optimism bias, they increase to £698 million, giving a BCR of 1.1. These figures, both above 1, demonstrate that the revenues directly generated by the Scheme are higher than the costs associated with implementing the Scheme. They are modest for a large public infrastructure project, but do not account for the significant benefits on the regional economy discussed from Section 4.44, for which STDC was originally established.

- 4.41 The NPSV is calculated by subtracting the present value of costs from Table 1 from the present value of benefits from Table 2 (£769 million). Using the unadjusted costs, this yields a NPSV of £348 million. After adjusting for optimism bias, this reduces to £71 million. These figures demonstrate that the Scheme will deliver net economic benefits in the public interest.
- 4.42 These calculations should be considered as conservative, as significant potential monetizable benefits have not been included, in particular the reduction in Keep Safe, Invest to Save and Tier 3 costs which is likely to result from the demolition and decommissioning work compared to a 'Do Nothing More' Scenario.
- 4.43 The calculations of both the BCR and NPSV both demonstrate the impact of the optimism bias adjustment factor. If costs are in line with STDC estimates, then the Scheme will deliver significant economic benefits from a national perspective, even before taking into account the regional economic benefits for which STDC was established. If costs overrun by 66%, at the upper end of large public infrastructure project overruns, then the benefits from a national perspective (and before considering the regional economic benefits) will only be marginally higher than the costs. I discuss this assumption further in Section 6.0.

Should regional economic benefits be taken into consideration?

- 4.44 As I explain in paragraphs 4.23 to 4.25, above, employment impacts that are not generated through productivity improvements or from labour supply effects are generally excluded from national appraisal. Although investment in infrastructure is widely recognised as a driver of productivity (see, for example, DAM 6 and DAM 7), and thus productivity gains are indeed likely as a result of the Scheme, the emphasis of the Scheme, as described by the Proof of Evidence of John McNicholas, is on creating new jobs.
- 4.45 Although job creation is generally not considered a benefit at the national level, there may be good reasons for considering it at the regional level, for example, if

the jobs are created in a disadvantaged area. It is therefore important to review the recent economic performance of the regional economy in order to assess whether there is a clear rationale for considering regional employment effects.

4.46 The economic activity of a country, region, business or individual can be measured by the economic value it generates in a year, measured by gross value added (GVA). The value that a nation, region, business or individual creates is directly (although not always proportionately) related to the income earned and to their spending power and standard of living.

4.47 Tees Valley has a low proportion of people of working age. The latest data published by the Office for National Statistics shows that in 2018 (DAM 8), the Tees Valley had a total population of 674,300. Of this population, 61.5% (414,400) were aged 16-64 (a commonly used proxy for 'working age'). This is below the average for the North East (62.5%) and for Great Britain (62.7%).

4.48 Tees Valley has a lower proportion of the working age population which is economically active than the wider North East region and Great Britain. The proportion of people of working age (16 - 64) who are economically active is 74.0%, below the average for the North East (75.8%) and Great Britain (78.9%). Of those who are economically inactive, 14.1% want a job (15,000 people) (DAM 8).

4.49 Tees Valley has higher unemployment than the wider region and Great Britain. Of economically active 16-64 year olds, 7.1% are unemployed, compared to 5.7% in the North East and 4.1% in Great Britain (DAM 8). Unemployment rates in Tees Valley have been significantly higher than the national average in every quarter of the last decade, and higher than those in the North East in 38 out of the last 40 quarters (DAM 9).¹

4.50 Unemployment in the region was exacerbated with the closure of the SSI Steelworks in 2015, which led to direct job losses of 2,000 employees and 1,000 contractors, and a further 1,000 jobs lost indirectly (CD/F2). The total loss of 4,000 jobs represented 1.4% of total employment in the Tees Valley in 2015 (DAM 10). As

¹ Measured by unemployment over the previous 12 months.

noted in Section 3.4 of the Proof of Evidence of David Allison, this had “*an enormous impact on the people and economy of the Tees Valley*”. The closure of SSI Steelworks received national media coverage (see, for example, DAM 11). The then Secretary of State for the Department of Business, Innovation and Skills, Sajid Javid, commissioned Lord Heseltine to “*support inward investment in the Tees Valley, and to look at the SSI site following its closure*” (CD/D6, Page 4). The establishment of STDC as “*the third ever Mayoral Development Corporation in the UK and the first to be formed outside of London*” was “*borne out of one of the key recommendations of the Lord Heseltine endorsed report*” (Proof of Evidence of David Allison, Sections 2.1 – 2.3).

4.51 As 2014 guidelines from the Department for Business, Innovation and Skills describe “*Assisted areas are recognised in European state aid rules as being less economically advantaged places that would benefit from additional support for development. As a result, financial support from Government is permitted to undertakings, typically businesses, for new investments in these areas.*” (DAM 12 Page 4). Areas with less than 75% of the EU average income (based on Gross Domestic Product, “GDP”) per capita can be designated assisted ‘a’ areas, and receive the most generous exemptions from restrictions on government support (DAM 12 Page 6). The 2014 – 2020 map, agreed in 2014, only listed the NUTS2 level areas of West Wales and they Valleys; and Cornwall as assisted ‘a’ areas (DAM 12 Page 7). However, a mid-term review conducted in 2016, after the closure of SSI Steelworks, and approved by the European Commission added Durham and Tees Valley to the list of assisted ‘a’ areas as of 1 January 2017 (DAM 13 Page 2).

4.52 Finally, I note from Section 2.3 of the Proof of Evidence of David Allison, that the objectives of STDC are to:

- 1 “*further the economic development and regeneration of the South Tees area, so that it becomes a major contributor to the Tees Valley economy and the delivery of the Tees Valley’s Strategic Economic Plan;*”

- 2 *“attract private sector investment and secure new, additional, good quality jobs, accessible to the people of the Tees Valley;”*
- 3 *“transform and improve the working environment of the Corporation area, providing good quality, safe conditions for the workforce and wider community;”*
- 4 *“contribute to the delivery of the UK Industrial Strategy, by supporting the growth of internationally competitive industries with access to global markets, taking a comprehensive approach to redevelopment at a scale that enables the realisation of an international-level investment opportunity.”*

4.53 The first three of these objectives have a clear spatial element. The first is to support economic development and regeneration *“of the South Tees area”*, the second is to attract investment and secure jobs accessible to *“the people of the Tees Valley”* and the third is to improve the working environment *“of the Corporation area”*.

4.54 Having reviewed the evidence summarised above, I conclude that there is a strong rationale for taking into consideration the regional economic benefits, in terms of job creation, when assessing the public benefits generated by the Scheme, for the following reasons:

- 1 The Tees Valley has underperformed in comparison with the national economy in recent years. Over the past decade, it has systematically had higher rates of unemployment than the national average. Economic activity, which affects incomes and spending power, has been lower than the national average.
- 2 Since the closure of SSI Steelworks, the region has been designated one of only three assisted ‘a’ areas in the UK. This provides exemptions from European Union state aid restrictions on government support in the region, recognising it as a disadvantaged area that would benefit from additional support for development.
- 3 The closure of SSI Steelworks exacerbated the already high levels of unemployment. This was a significant event which received national media coverage and triggered a targeted government response, including the

independent report prepared by Lord Heseltine and the establishment of the first Mayoral Development Corporation outside of London.

- 4 Three of the four objectives of STDC have a focus on the regional economy. STDC is a publicly owned corporation (*"a wholly owned subsidiary of the Department for Business, Energy and Industrial Strategy"* – Section 1.5 of the Proof of Evidence of David Allison, STDC 1/2). STDC does not have an objective to generate surplus cash flows (profits) on behalf of its shareholder (BEIS) or other private sector investors. Thus, to count as benefits only the surplus cash revenues described in Section 4.35, and to ignore the regional economic impacts, is inconsistent with the explicit objectives of STDC.

Will there be additional regional economic benefits?

- 4.55 In this section, I seek to quantify, at a high level, the benefits through job creation associated with the implementation of the Scheme, and compare these with the (national) social CBA outlined above. In doing so I rely on assumptions about the scale of job creation set out in the Master Plan. I assess the validity of these assumptions in more detail in Section 6.0
- 4.56 The Vision described on Page 16 of the STDC Master Plan (CD/F2) sees *"the creation of up to 20,000 new jobs across the Tees Valley"*. Page 76 provides further details: *"In view of typical employment densities and development timescales for such uses, and sites elsewhere, this suggests a total potential for 20,000 net new (direct and indirect) jobs over the period 2017 to 2042 across the Tees Valley."* Finally, Page 13 specifies that the aims and outcomes for the Mayoral Development Corporation included: *"Promote and support diverse, resilient redevelopment within the STDC Area to achieve 20,000 net new jobs when fully developed, with a salary level not less than the national average."*
- 4.57 I use these figures to provide an indicative calculation of the regional economic benefits once job creation is taken into account. The calculation is based on the following:

- 1 20,000 net new jobs are created between 2020 and 2042. These are distributed evenly, meaning 870 net new jobs are created in each of the 23 years.
- 2 Jobs have a persistence of 5 years, meaning that after five years no benefits are recorded from that jobs. This means that the cumulative number of jobs generating benefits rises by 870 per year for 5 years, reaching 4,348 net new jobs in 2024, and then remaining constant (as new jobs replace jobs 'lost' after 5 years) until 2043, when no new jobs are created, but jobs continue to be eroded by 870 per year, reaching zero in 2047.
- 3 The objectives listed in 4.57 note that new jobs should have a salary "*not less than the national average*". In line with this objective, each job is assumed to add the UK national average GVA (£54,330 per annum) to the regional economy (Table B3 from DAM 39).
- 4 All future benefits are discounted at 3.5% per annum (in line with Green Book guidelines, DAM 1).

4.58 Using these assumptions, I calculate a net present value to the regional economy of £3.57 billion. The calculations are provided in Appendix 1 to this Proof of Evidence.

4.59 I exclude from the calculation any multiplier effects, as these are assumed to be captured within the jobs estimates, which include indirect jobs.

Table 3 - Results of economic appraisal at the national and regional level

	National only (£ millions, NPV)	National + regional (£ millions, NPV)
Costs		
Expected Costs	421	421
Optimism bias @ 66%	278	278
Total Costs	698	698
Benefits		
Revenues	769	769
Economic impacts	-	3,569
Total benefits	769	4,338
Economic Appraisal		
NPSV	71	3,640
BCR	1.10	5.21

Source: Appendix 1 to this Proof of Evidence

4.60 In Sections 4.44 - 4.54 I concluded that there is good reason to take into consideration the regional economic benefits of the Scheme in addition to the national benefits. In this section, I have provided an indicative calculation of the potential scale of those economic benefits. My initial assessment is that the gross economic benefits to the regional economy (£3.57 billion) through higher employment of the Scheme are over four times greater than the national benefits (£769 million). Taking into account regional economic benefits, the NPSV increases to £3.64 billion and the BCR to 5.2.

4.61 This should come as no surprise. The national benefits are calculated based on the cash surplus that the Scheme is expected to generate and which would accrue to investors in the Scheme (including STDC). STDC was not established to generate cash surpluses or profits, but with a specific mandate to promote regional economic development through investment and job creation. It is therefore entirely consistent with the objectives of STDC that the value of the regional economic impacts should be far greater than the revenues generated by the Scheme.

5.0 **What are the key assumptions underpinning the benefits?**

5.1 In this Section I summarise the most important assumptions that are required for the Scheme to deliver the economic benefits established in Section 4.0, in line with the second part of my instructions. I then go on (in Section 6.0) to review the economic viability of these assumptions, and therefore the viability of the benefits of the Scheme.

5.2 The main assumptions which I have identified as potentially affecting the ability of the Scheme to deliver the economic benefits discussed in Section 4.0 are as follows:

- 1 The costs of implementing the Scheme are in line with STDC estimates. However, as I discuss in Sections 4.39 and 4.43, my calculation of the NSPV is conservative as it has already included an adjustment for optimism bias of 66%.
- 2 The revenues generated by the Scheme are in line with STDC projections. In particular, this requires that there is (a) sufficient interest from investors in occupying the Order Land so that occupancy is in line with STDC's assumptions, and (b) that the rental rates these investors pay (in £ per acre) are in line with STDC's assumptions.
- 3 Finance is available to STDC to cover the short-term cash deficits it is expected to incur whilst investing in the redevelopment of the STDC Area but before sufficient rent revenues have accrued.
- 4 (When considering the regional economic benefits) the jobs created are additional to the area (i.e. would not have been created without the Scheme) and they generate GVA per employee at or above the national average.

6.0 **Are the assumptions which underpin the estimated economic benefits valid?**

6.1 In this Section, I review the assumptions I have identified in Section 5.0 to assess whether they are viable, and, therefore, whether the economic benefits of the Scheme overall are viable. I consider each of the four assumptions identified in turn.

Are the assumptions on Scheme costs valid?

6.2 The costs of implementing the Scheme have been estimated by STDC. I have not attempted to independently verify or benchmark these costs.

6.3 In the Social CBA undertaken in Sections 4.29 - 4.43, I have applied an optimism bias adjustment factor on all costs of 66% (effectively assuming the costs of delivering the Scheme are 66% higher than anticipated, resulting in a lower and conservative estimate of the net social present value and benefit to cost ratios. The guidelines provided in the Green Book (DAM 1, Page 90) stipulate that *“the adjustment percentages for these generic categories ... should be used in the absence of more robust, organisation and project specific evidence. It is based on a study by Mott MacDonald into the size and causes of cost and time over-runs in past projects.”* In the absence of robust, organisation and project specific evidence on optimism bias, I have adopted the Green Book prescribed adjustment factor.

6.4 The adjustment factor I have applied is the upper bound value for non-standard civil engineering projects, which are defined as follows: *“non-standard civil engineering projects involve construction of specialist facilities or infrastructure e.g. innovative rail, road, utility projects, or upgrade and extension projects.”* (DAM 1, Page 90). The adjustment factors for non-standard civil engineering projects are higher than those for other engineering projects, including standard buildings, non-standard buildings, and standard civil engineering projects (DAM 1, Table 7, Page 91).

6.5 The Green Book recommends reducing the upper bound optimism bias adjustment factor based on an assessment of risks and potential mitigating actions: *“Step 2 – consider if the optimism bias adjustment can be reduced. Reduce the upper bound*

adjustment to the extent risk has been identified and included in cost estimates. If appropriate consider the extent to which the remaining contributory factors are mitigated and apply a mitigating factor. The mitigation factor has a value between 0, which means that contributory factors are not mitigated at all, and 1, which means all contributory factors are fully mitigated. The value selected between 0 and 1 will be an evidence-based judgement of the extent to which risk has been mitigated at the outset, and needs to be justified. In practice this will mean reducing the optimism bias adjustment from the upper bound to the extent that risk has been costed.” (DAM 1, Page 91).

- 6.6 I have reviewed the Mott MacDonald report (DAM 38) which underpins the parameters in the Green Book for optimism bias. Table 8 provides a breakdown of the risk areas and their contributions to optimism bias. These risks include inadequacy of the business case (contributing 39% of recorded optimism bias for capital expenditure for non-standard civil engineering projects), site characteristics (2%) and legislation and regulations (3%).
- 6.7 The detailed analysis undertaken by STDC of costs and revenues is based on commissioned advice by consultancies and several years of on-site experience and management, which mitigates the risks of cost overruns. In my opinion, the analysis undertaken by STDC means that a lower optimism bias adjustment factor would be appropriate. My use of the upper bound adjustment factor of 66% on all expenditure exaggerates the likely costs and suppresses both the BCR and NPSV. For this reason, I have provided estimates with and without the adjustment factor of the BCR (1.1 and 1.8 respectively) and NPSV (£67 million and £346 million), and expect the true social value to lie somewhere within this range.
- 6.8 Although I am unable to validate the assumptions on the costs of delivering the Scheme, I am satisfied that the use of the upper bound optimism bias adjustment factor for non-standard civil engineering projects is in line with UK Government guidelines for undertaking an assessment of the social value of a project where more detailed information on potential cost overruns is not available. Even with this

substantial adjustment factor, the Scheme delivers significant economic benefits, particularly when regional economic impacts are taken into account. I am therefore satisfied that the assumptions on costs do not pose a risk to the ability of the Scheme to deliver positive benefits in the public interest.

Are the assumptions on Scheme revenues valid?

6.9 As summarised in Table 2, above, the components of revenues are:

- 1 Rental income (accounting for 70% of the present value of Scheme revenues)
- 2 Business rates (accounting for 22% of the present value of Scheme revenues)
- 3 Service charges (accounting for 6% of the present value of Scheme revenues)
- 4 Scrap (accounting for 2% of the present value of Scheme revenues).

6.10 This shows that the most significant assumptions underpinning the revenues generated by the Scheme are those which underpin the rental income calculations. Rental income is calculated as the product of the total land occupied by investors (in acres) and the average rental rates generated by occupied land (£ per acre).

Average rental rates (£ per acre)

6.11 I have seen the average rental income per acre of land assumed by STDC. However, I have been advised that this figure is commercially sensitive, as its disclosure may jeopardise future negotiations between STDC and investors. I have been instructed not to disclose it. I have not sought to independently validate or benchmark the assumptions on rental rates, however, I understand from discussions with STDC that:

- 1 the assumptions underpinning these calculations are based on estimates produced by Dodds Brown (a Chartered Surveyors and Property Consultant company) in 2017
- 2 these assumptions were updated by Thomas Stevenson (a commercial property consultancy) in 2019
- 3 the assumptions were reassessed by Avison Young in 2019

- 4 ongoing negotiations with potential inward investors close to agreeing Heads of Terms are in line with these assumptions; and
- 5 STDC and its advisors are optimistic that higher rental rates may be achievable in the future.

Occupancy rates (acres)

- 6.12 The total size of the developable land on the land subject to the Order is 1752 acres, with 1470 acres which will generate rental income. STDC assume that all rent-generating land will be occupied by 2029/30 (within 10 years). This implies an average investor take up rate of 147 acres per year. In this section I review the evidence to determine whether this assumption is viable.
- 6.13 The STDC Area will have many of the qualities which make it attractive for investment once the Scheme has been implemented. These are summarised in Section 3.12, above, Section 3 of the Proof of Evidence of John McNicholas, and Section 9 of the Proof of Evidence of Guy Gilfillan. These include:
- 1 Good quality infrastructure, with excellent transport links by road, rail and ship, energy connections, shared infrastructure for key manufacturing sectors (e.g. chemicals storage) and waste treatment facilities
 - 2 A large labour force pool with the required skills for a scale-up of industrial activity.
 - 3 The UK's largest integrated chemical complex which has the second largest manufacturing capacity in Western Europe.
 - 4 Large development spaces.
- 6.14 Section 6.4 of the Proof of Evidence of Guy Gilfillan (STDC 5/2) notes that "*The enquiries listed below (where a size of plot has been discussed), if taken up, would result in the development of over 1,000 acres (405 ha) of land.*" He provides details of the enquiries which have been received so far. I have summarised these in Table 4. This evidence suggests that STDC is in a strong position to attract the assumed levels of investment.

Table 4 – Pipeline of investors, land required and expected jobs that they will create (where available)

Project	Land required (Acres)	Jobs created (direct jobs unless otherwise stated)	Jobs per acre
Clean Energy Generation	124	Over 1,000 construction jobs over a four-year period. 150 to 200 direct jobs 450 – 600 indirect jobs.	1.2 – 2.0
Offshore Wind base	200	1,000 to 1,500 direct jobs Numerous supply chain jobs	5 – 7.5
Carbon Capture, Utilisation and/or Sequestration/Storage (CCUS)		4000 direct and indirect jobs	
Hydrogen Economy	10	100 jobs Numerous supply chain	10
Subsea power transmission cable which	50	500 – 600	1.7 - 2
Advanced Waste Processing and Energy Capture	25		
Steel sections producer	10-20, growing to 100	15-20, growing to 200-300	1 – 2, increasing to 2 - 3
Steelmaker	175	700 direct 1,000 supply chain	4
Electric arc mini mill	90	300 direct Many jobs in the supply chain	3.3
R&D facility		300	
Methanol Production	300	500 direct jobs Many indirect jobs.	1.6
Bulk fertiliser storage production	40	100-150	2.9 – 4.3
APCR Blocks		85 direct new jobs	
Rail		300 – 500 (15 – 200)	
Total	1114	4015 – 5035	3.4 – 4.3

Source: Section 6 of the Proof of Evidence of Guy Gilfillan

- 6.15 Previous research also indicates that there is high demand for industrial space in the UK. A 2016 report by Regeneris Consulting reviewed vacancy rates across 7 industrial estates and found the average was 3.5% (DAM 14, page 85). Although not directly comparable (the Regeneris report focused on building vacancy, whereas the assumptions underpinning the STDC rental projections are about land occupancy), it does imply a high level of demand from end users for industrial space relative to supply.

Free port status

- 6.16 In addition to these qualities, the Scheme may enhance its attractiveness as an investment location if the STDC Area is given 'Freeport' status. DIT has announced establishment of up to 10 Freeports. Freeports, sometimes referred to as 'Free

Zones', 'Special Economic Zones' or 'Free Trade Zones' are an area within a country's territorial area but considered outside of the country's customs border. The development of a National Freeport Policy provides the UK an opportunity to nominate geographically defined zones with a package of attractive incentives – including fiscal, financial and hard and soft infrastructure – which can lower the costs of doing business, increase competitiveness and stimulate additional investment.

- 6.17 This allows for goods to be imported into the freeport duty, excise and VAT free, with these charges only becoming due when the goods, or the finished products they are incorporated into, exit the freeport into the domestic market. Many countries offer free zones and have demonstrated their success, including EU countries, the USA, as well as Middle Eastern and Far Eastern countries. In many cases, these basic advantages are combined with more generous fiscal and financial incentives, and the sites offer high quality hard and soft infrastructure.
- 6.18 Freeports are not a new concept, they are permitted and indeed exist across the EU. Between 1984 and 2012, nine sites in the UK gained freeport status. However, Freeports in the EU have typically offered only the most basic package of benefits, essentially already available to businesses through schemes such as inward processing relief and customs warehousing, albeit with a reduced administrative burden.
- 6.19 On 1 August 2019 Liz Truss announced the creation of a Freeports Advisory panel to advise the Government on the creation of up to 10 Freeports (DAM 40). Subsequent reports suggest that the government is now considering 'at least' 10 Freeports (see, for example, DAM 41).
- 6.20 The STDC area is an ideal site for a free zone. It has the capacity to increase trade volumes, good domestic and international transport connections, ample land, and access to key inputs including labour and energy (feasibility). It is an area of relatively low income and high unemployment, in one of the slower growing regions of the UK, and that has been hit by the closure of several large industrial sites in

recent years, making it appropriate for targeted regional support. It is home to a large chemicals cluster, with an appropriately skilled workforce and the shared infrastructure and an opportunity to capitalise on the benefits of agglomeration.

6.21 Tees Valley Combined Authority has been a champion of Freeports in the UK. Tees Valley Mayor Ben Houchen commissioned Vivid Economics to produce a policy paper and accompanying economic analysis to gain a realistic interpretation of the benefits, and an understanding of which incentives would work best. It proposed STDC as the site for a pilot Freeport. This was published in July 2019, shortly before Liz Truss's announcement in Teesport that up to 10 Freeports would be created in the UK, and Ben Houchen was selected to be a member of the Freeports Advisory Panel (DAM 40).

6.22 Based on the economic and political evidence in favour of the STDC Area, my opinion is that it has a very high likelihood of being selected to become one of the 10 Freeports established in the UK. My assessment of the benefits of the Scheme and its overall viability does not depend on STDC securing Freeport status. However, well designed and ambitious Freeport incentive packages can offer significant benefits to businesses operating in Freeports which, combined with the marketing benefits of gaining Freeport status, can significantly enhance the attractiveness of the STDC Area as an investment destination and increase the demand from investors.

6.23 Having reviewed all of the above evidence, I believe there is good evidence to demonstrate strong demand and high levels of occupancy on the Order Land once redevelopment has been completed. I also understand, through discussions with STDC, that, thanks to the phased approach they are proposing for redevelopment, if uptake and occupancy of developed land were to be slower than forecast, they would be able to mitigate any risks to the financial viability of the Scheme by delaying the development of further land.

Implied capital investment by occupiers

- 6.24 Although the calculations of revenues and jobs created outlined in Section 4.0 do not have an explicit assumption on the level of capital investment from private sector industrial enterprises, they do imply a significant level of investment. An alternative approach for testing the viability of the assumed occupancy rates is, therefore, to consider the scale of capital investment that is implied and to benchmark this against regional and national rates of investment.
- 6.25 In a 2019 study, Vivid Economics estimated that delivering the Master Plan ambitions for 20,000 direct jobs on the STDC Area would imply £5.2 billion of business investment over 25 years, or around £200 million per year (DAM 15 page 30). Vivid Economics (2019) based its calculation on the ratio of capital investment to jobs created for foreign-direct investment projects in the UK in the sectors prioritised in the Master Plan. There is high variation between projects in terms of the capital investment required, both on a per-acre or on a per-job created basis. The Proof of Evidence of Guy Gilfiillan (STDC 5/2, Section 6.10), for example, highlights the huge investment required in the Clean Gas project of £5.2 billion, which will create 150-200 direct jobs.
- 6.26 However, the conclusion of Vivid Economics is insightful, that *“The Masterplan implies a significant boost to investment in the region, of around 30%, but this remains modest at the national scale, equivalent to 0.8% of national FDI inflows, and just 0.11% of total business investment (including both FDI and domestic investment) in 2017.”* (DAM 15 page 30).
- 6.27 The indicative calculation of the regional benefit of job creation I provide in Sections 4.55 - 4.61 includes indirect jobs (through the supply chain and not necessarily in the STDC Area), whilst the Vivid Economics calculations focused exclusively on direct jobs created within the STDC Area. It is, therefore, likely that the scale of investment calculated by Vivid Economics (which focused on direct jobs only) is greater than the scale of investment required to deliver the jobs targeted by the Scheme (which include direct and indirect jobs). I conclude that there are no implicit

assumptions about the scale of inward investment into the STDC Area which would be implausible for a nationally significant project.

Business rates

- 6.28 Business rates account for 22% of the present value of revenues from the Scheme. STDC has projected these using an assumption that they are 49.3% of rental income, but accrue with a delay from the first rent (as shown in Appendix 3 to the Proof of Evidence of Gary MacDonald, STDC 3/3). This is the standard multiplier for the financial year 2018/19 (it increased to 50.4% in 2019/20, meaning an increase in business rates) which is applied to the estimated open market property rental values on 1 April 2015 (DAM 16). Gary MacDonald has also applied a dampening factor of 85%. They are therefore underpinned by the same assumptions on occupancy and rental rates as rental revenues, discussed above.

Service Charges

- 6.29 Service charges account for 6% of the present value of revenues from the Scheme. Service charges are assumed to accrue either one or two years after initial occupancy. They are therefore underpinned by the same assumptions on occupancy as rental revenues, discussed above.

Scrap

- 6.30 Scrap values account for 2% of Scheme revenues. These have been estimated by DDM, a specialist demolition firm. As they represent an insignificant share of overall revenues and benefits from the Scheme, I have not reviewed these in further detail.

Does STDC have access to sufficient funding to implement the Scheme?

- 6.31 During the initial years of the Scheme, expenditure on redevelopment is higher than revenues. In later years, once the redevelopment has been completed, revenues exceed expenditure. This creates an upfront funding requirement to undertake the investment in the Scheme. The viability of the Scheme therefore is contingent on STDC securing enough funding to undertake the initial investment.

6.32 I have reviewed the STDC projected expenditure and revenues (as discussed in Sections 6.11 - 6.30 above). I have also reviewed the projected Keep Safe, Invest to Save, and Tier 3 costs. Although I have hitherto excluded these from my assessment of the costs and benefits of the scheme as I consider them a 'sunk' cost, they nonetheless represent a cash outflow and have implications for the required funding.

6.33 My review suggests that, before taking funding sources into account, and excluding optimism bias adjustments, but including Keep Safe, Invest to Save and Tier 3 costs, the Scheme:

- 1 Will have a negative cumulative cash flow for the first 15 years, breaking even in 2035/36.
- 2 Will have a funding requirement of £342 million (by financial year 2027/28).

6.34 This excludes the costs of any finance (for example, interest repayments on any loans).

6.35 The Proof of Evidence of David Allison (STDC 1/2, Section 2.15) and the Proof of Evidence of Gary MacDonald (STDC 3/2, Section 3 and Appendix 3, STDC 3/3) provide further details on the existing funding available and the funding strategy. Appendix 3 to the Proof of Evidence of Gary MacDonald (STDC 3/3) highlights the sources of funding, which include:²

- 1 Funding from central government of £79 million. This includes:
 - a the transfer of the balance of committed funding for Keep Safe, Invest to Save and Tier 3 funding in 2022/23 of £11 million (Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, row 24);
 - b Comprehensive Spending Review (CSR) funding of £56 million (Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, row 25).Together with the transfer of committed Keep Safe, Invest to Save and

² To ensure consistency across the figures I am reporting these funding sources are provided in real terms, that is, net of inflation. They are therefore lower than the nominal figures reported elsewhere, including in the Proof of Evidence of Gary MacDonald (STDC 3/2) but consistent with his cash flow model in real terms (Appendix 3b).

Tier 3 funding this represents £66 million of the £71 million approved by central government, with inflation accounting for the residual (Section 3.12 of the Proof of Evidence of Gary MacDonald, STDC 3/2, and Appendix 7, STDC 3/3); and

- c Ministry of Housing, Communities and Local Government (MHCLG) funding for the redevelopment of the Prairie Site of £13 million (Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, row 23), already been secured from Central Government within the 2018 Autumn Statement (Section 3.19 of the Proof of Evidence of Gary MacDonald, STDC 3/2).

2 Local government funding of £41 million, including:

- a a land purchase loan of £32 million (Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, row 21). This is part of a £46.2 million loan used to acquire the Order Land, with £12.1 million already used to acquire the Tata Land);
- b TVCA Prairie Site Support of £10 million (Appendix 3b to the Proof of Evidence of Gary MacDonald, STDC 3/3, row 22).

6.36 In total, these amount to £121 million of funding, leaving an additional funding requirement of £221 million.

6.37 As explained in Section 7.8 of the Proof of Evidence of John Knowles: "*The council could utilise Public Works Loan Board monies to fund the development cost. PWLB is a statutory body operating within the United Kingdom Debt Management Office, an Executive Agency of HM Treasury. PWLB's function is to lend money from the National Loans Fund to local authorities, and to collect the repayments.*"

6.38 Appendix 3b to the Proof of Evidence of Gary MacDonald (STDC 3/3, row 28) shows that the remaining funding required will be obtained with a loan of £255 million (£294 million in nominal terms), with an assumed interest rate of 3% (row 9).

6.39 The Proof of Evidence of John Knowles also assesses the potential for private sector investment in the Scheme. He concludes that: *“The total size of funds currently raised in Europe specifically with an Industrial and Logistics focus is €20.752bn, this is a considerable quantum of current investment. I have also highlighted the typical cost of money for each fund which ranges from 8-12% IRR for the funds currently raised in the market.”*

6.40 To determine whether the Scheme could deliver the returns required for private sector participation, I have calculated the internal rate of return (IRR) of the Scheme. The IRR shows potential investors the average annual return they can expect to make over the lifetime of an investment. An IRR of 10% means that, on average, an investor will make £10 profit each year for every £100 invested. To do so, I have included:

- 1 The projected costs of redevelopment
- 2 The costs of Keep Safe, Invest to Save and Tier 3, as these represent a cash expense
- 3 The projected revenues from the Scheme (excluding business rates not retained by STDC)
- 4 The funding sources described in Section 6.35 above. For simplicity, I treat this funding as a cash inflow and any associated repayments as a cash outflow. The £34.1 million land purchase loan is, therefore, considered as income for the Scheme, whilst the repayments (including principle and interest) on the overall £46.2 million loan are treated as expenses.

6.41 I have calculated the IRR of the Scheme in the Appendix to this Proof of Evidence (STDC 7/3). My calculations imply an IRR of 11.3% for the Scheme. The calculations are provided in This is in line with the upper bound of the range of target IRR's of private investors (8 – 12%) found in the Proof of Evidence of John Knowles (STDC 6/1).

- 6.42 The IRR which I have calculated is a real IRR, that is, it excludes the impact of inflation. A nominal IRR, which took into account the impact of inflation on future cash flows, would result in a higher IRR as cash flows further in the future (generally positive and driven by revenues) are increased proportionately more than more immediate cash flows (generally negative and driven by the investment costs). I understand that the IRRs presented by John Knowles are nominal. Real and nominal IRRs can be approximately compared by adding expected inflation to real IRRs. The Bank of England has a target for inflation of 2%, so a real IRR of 11.4% is approximately equivalent to a nominal IRR of 13.4%.
- 6.43 The actual IRR available to private investors in the Scheme, if any, may be higher or lower than the IRR estimated, both because costs and revenues may differ from those projected, and because the financial structure of the investments may allocate a higher or lower share of costs and revenues to the investor. For example, if STDC funded the Scheme using 50% debt, through a low (3%) interest rate loan from PWLB, a higher rate of return of between 16% and 20% (depending on the timing and structure of financing and profit sharing) could be available to private sector investors. These results should only be seen as indicative as they will depend on the financial structuring of the Scheme.
- 6.44 My assessment of the evidence presented by John Knowles, the projected costs and revenues of the Scheme, and the available funding which STDC have indicated is available, is that the Scheme is capable of delivering sufficient returns to private sector investors to be financially viable.
- 6.45 The financial structure of the Scheme, including the sources of funding and the allocation of cash surpluses, can affect the distribution of the financial benefits of the Scheme. For example, if the Scheme is financed entirely through a loan from the PWLB, and with no private sector investment, then all of the financial benefits are retained by the public sector. If, however, private sector investment is secured, then some of the financial benefits (cash surplus) will be shared with the private sector. This does not necessarily affect the social value of the Scheme from a

national perspective, as Green Book guidelines do not treat public sector surpluses differently from private sector profits. However, if the Scheme is part financed through foreign investment, then some of the profits from the investment may be transferred to investors overseas and would therefore reduce the national benefits. These would not affect the regional economic benefits arising from job creation.

Will the Scheme generate additional jobs in the region?

6.46 In this Section, I consider the validity of the assumptions underpinning the calculation of regional economic benefits through job creation. These assumptions are set out in my indicative calculation detailed in Section 4.57. To recap, they include:

- 1 That the Scheme will create 20,000 direct and indirect jobs in the region; at an annual rate of 870 jobs per year for 23 years;
- 2 That the jobs will have a persistence of 5 years;
- 3 That these jobs will be additional, i.e. they would not have been created without the Scheme (known as deadweight) and would not reduce employment elsewhere within the region (e.g. by attracting workers from other employers that are then left with unfilled vacancies);
- 4 That the jobs would generate GVA-per-employee of at least the national average.

The creation of 20,000 direct and indirect jobs

6.47 The Master Plan does not provide a breakdown of direct jobs (created within the STDC Area) and indirect jobs (created through the supply chain in the wider Tees Valley region). However, Vivid Economics (2019, DAM 15) estimated that if 20,000 direct jobs were created on the STDC Area, the spillover effect produced by the indirect and induced employment impacts would add around 12,000 additional jobs to the region, as shown in Table 5.

Table 5 Regional employment effects after 25 years

Regional impact (Tees Valley and Durham)		
Direct jobs	Indirect and induced jobs	Total jobs
20,266	11,907	32,172

Source: Vivid Economics, 2019, DAM 15

- 6.48 The Scheme seeks to create 20,000 jobs through including both direct (through new investment on the STDC Area) and indirect (through boosts to demand in regional supply chains). The previous work undertaken by Vivid Economics suggests that, on average, 1.7 direct jobs are required for each indirect, *regional* job. Those ratios imply that, of the 20,000 jobs, approximately 12,600 may be expected to be direct (within the STDC Area) and 7,300 indirect (within the wider Tees Valley).
- 6.49 I have reviewed the estimates of the numbers of jobs created against benchmarks published by UK Government and also against the pipeline of current investment.
- 6.50 The 12,600 jobs are expected to be generated over the entire STDC Area. For simplicity, I assume these will be created over the 1,470 acres of Order Land which is expected to generate rental income. This gives a jobs density of 8.6 jobs per acre.
- 1 In 2010 the UK Government has published jobs density guides (DAM 17). For industrial activity, each FTE requires 18 – 60 square meters of factory floor space (DAM 17 Page 6). This is equivalent to a jobs density of 67 – 224 FTE per acre of factory floor space. However, factory floor space is not equal to the total size of rentable land. Space is required for car parks, storage, communal space etc. The Greater London Authority has published benchmarks for plot ratios (DAM 18). The plot ratio provides a comparison of the proportion of built floor area to land area. Plot ratios for industrial estates are 70%, or 65% for ‘industrial usage’ (DAM 18 – page 28). Taking the lower of these (65%), and combining with job density, yields benchmarks of between 44 and 146 FTE per acre of land.
- 6.51 Based on these estimates, the implied jobs density of the Scheme (8.6 jobs per acre) is low, and therefore, I conclude is achievable.

6.52 I have also reviewed the jobs density of pipeline investments in the Proof of Evidence of Guy Gilfillan (STDC 5/2, Sections 6.10 – 6.11), summarised in Table 4, above. These investments include some large investments in heavy industry. Overall, the jobs density ranges between 1.2 jobs per acre (for the Clean Energy Generation and CCUS project) and 10 jobs per acre (for the Hydrogen Economy project). The average jobs per acre for pipeline investments where information is available is 3.4 – 4.3.

6.53 If future investments were similar to the current pipeline, the total direct jobs on the STDC Area would only be between 5,000 and 6,300, and total direct and indirect jobs would be between 8,000 and 10,000. Although these are lower than the 12,600 jobs expected across the total STDC Area, I also note that:

- 1 The STDC Area includes land not included in the Order Land, including, for example, 350 acres at the Redcar Bulk Terminal. This land has the capacity to increase overall employment
- 2 The clustering of new industrial activity may also increase direct jobs at existing businesses within the STDC Area, including the Port Terminal, security and railways.
- 3 The results are based on an extrapolation of the current pipeline, which is focused on heavy industry. Future investment in the Northeast Industrial Zone, for example, is targeted in advanced manufacturing, testing and laboratory services, and training (Section 4.16 of the Proof of Evidence of John McNicholas, STDC 2/2). The Proof of Evidence of Guy Gilfillan also identifies interest in data centres (STDC 5/2, Section 6.21). The benchmarks for light industry and data centre employment density are significantly higher than the employment density for pipeline investors (DAM 17 Page 6), and are therefore likely to make a higher contribution to overall employment.

6.54 My assessment is that the jobs targets in the Scheme are indeed viable, based on employment density, compared to standard benchmarks published by UK Government. The current pipeline of investment is concentrated in very heavy

industry, with low employment density, and if this focus persists across the entire Order Land, the total job impacts are likely to be lower (although they still represent a significant public benefit). To achieve the jobs targets STDC will need to attract investment in future in business activities with higher employment density.

Jobs will persist for 5 years

6.55 The assumption on jobs persistence of 5 years (meaning that when a job is created, it is assumed that, on average, there are no further benefits to the regional economy after 5 years) is based on 2016 DCLG guidelines (DAM 2, page 56). In my opinion this is a conservative assumption, and means that, in any given year for the next 23 years, a maximum 4,348 net additional workers will be employed as a result of the Scheme (see Section 4.57).

6.56 I note that the pipeline of investors described in the Proof of Evidence of Guy Gilfillan includes estimates of 4,700 – 5,700 direct and indirect jobs, with many other pipeline investors not reporting employment estimates.

Additionality of jobs

6.57 In Section 4.49, I noted that the unemployment rate in Tees Valley and Durham is higher than the regional and national average, at 7.1%. The latest official figures show that there are 22,000 unemployed people in the region, with a further 15,000 ‘economically inactive’ people that would like a job (DAM 8). In total, that represents 37,000 potential employees. This demonstrates that there is sufficient slack in the labour market for the 4,348 jobs to be filled by people previously unemployed, so that the GVA created by those employees is additional.

The GVA of each job will be equivalent to the national average

6.58 The latest published figures on the average GVA per employee in Tees Valley and Durham (for 2017) were £47,140, equivalent to 87% of the national average (£54,330). This would mean that the jobs created would, on average, need to 15% more economically productive than the average employee in the region in 2017.

6.59 My assessment of this assumption is that it is viable, because:

- 1 The Scheme seeks to attract new investment in high value industries which are likely to be more productive than the regional average; and
- 2 Any downside risk to the GVA assumption may be offset by the assumption on jobs persistence, which results in a very conservative assumption for annual employment levels in my calculations.

Summary

6.60 Having reviewed the key assumptions which underpin the viability of the Scheme and its ability to deliver economic benefits, my conclusion is that the assumptions are valid and that the Scheme and its associated benefits are viable:

- 1 The assumptions on costs have been produced by STDC. I have included a generous allowance for cost overrun (optimism bias) in my calculations.
- 2 The assumptions on revenues are based on rental rates that have been reviewed by three property consultancies. There is a strong pipeline of investment which supports the assumptions on occupancy. The implied level of inward investment is reasonable for a nationally significant scheme.
- 3 The projected costs, revenues, and secured funding provide an expected rate of return in line with private sector investment targets, demonstrating that STDC will be able to secure the finance required for implementing the Scheme.
- 4 The assumptions on job creation are conservative based on employment density benchmarks and the existing pipeline of investments.

7.0 **The Viability of the Scheme if the Order Land is not brought under comprehensive control**

Attracting new investment by maximising agglomeration benefits

7.1 As I discuss below, appropriate zoning of a site under single ownership can maximise the potential for agglomeration effects by promoting colocation in prioritised sectors. The Proof of Evidence of John McNicholas sets out STDC's approach to zoning (STDC 2/2):

- 1 *"Target industries for the [North Industrial Zone, NIZ] include: large-scale advance manufacturing; energy generation and energy innovation; and bulk materials and minerals processing and export. Given the scale of the NIZ, there is sufficient flexibility to accommodate a range of different uses, and the Master Plan provides alternative illustrative concept layouts in demonstration of this."* (STDC 2/2, Section 4.12).
- 2 *"The target industries for the [Northeast Industrial Zone] include: advanced manufacturing; research and development; testing and laboratory services; industrial and technology training; and commercial space to serve new industry. This zone is characterised by uses connected with advanced technology and innovation, and, as an example, it lends itself to the establishment of an incubator industrial and advanced technology park or campus (potentially in the Steel House area). As the innovation nerve centre for South Tees, such a use would facilitate the forging of strong links with academia, and research and development institutions, and it would help support an employment shift towards skilled technology-based manufacturing".* (STDC 2/2, Section 4.16).
- 3 *"The [Central Industrial Zone, CIZ] is sized at close to 200 acres (80 hectares) and it sits adjacent to an extensive array of largely non-utilised existing rail freight sidings, offering connectivity to multiple rail spurs. It therefore offers a potential location for accommodating rail-related uses. Given the adjacency of*

the site to the existing British Steel operations, the ClZ also offers the potential for the siting of further metals and heavy equipment manufacturing industries. Such uses are outlined in the Master Plan.” (STDC 2/2, Section 4.19).

- 4 *“Target industries for the [South Industrial Zone] include; offshore wind turbine assembly and manufacturing; other offshore energy industries; port-based fabrication; rig and large equipment decommissioning; metals manufacturing; contract fabrication; and energy generation. Regarding offshore wind turbine assembly and manufacturing, the South Bank site (former Tata land) has been identified by BEIS and DIT as one of the only locations on the East coast of the UK with the potential for establishing a major fabrication and assembly hub to serve new and emerging offshore wind developments, such as Dogger Bank, and for enabling HM Government’s targets of 60% UK-content within the sector and of increasing exports fivefold to £2.6billion, both by 2030, to be achieved.” (STDC 2/2, Section 4.23).*

7.2 Harnessing agglomeration effects are a critical driver of the success of industrial sites. As the volume on agglomeration economics from the National Bureau of Economic Research shows, these effects occur when related firms locate close together, resulting in reductions in transport costs, considered broadly to include barriers to sharing goods, people and ideas (DAM 19). For instance, suppliers located close to their customers reduce the costs and time of transporting goods. Companies operating in similar sectors can benefit from a cluster of proximate suppliers, regional pools of appropriately skilled labour and enjoy knowledge spillovers from companies doing similar work (so called Marshallian externalities).

7.3 Firms can reduce their costs through sharing of suppliers and a skilled labour pool. A cluster of firms in the same sector leads to suppliers of sector-specific goods locating nearby to the cluster to reduce their transport costs (DAM 21). Furthermore, industrial clusters can draw on a shared regional pool of skilled labour that arise to meet their demand, meaning that firms don't have to spend as much on recruitment. For instance, the development of a tech cluster in Manchester has attracted more

skilled workers to move there, as evidenced by 69% of respondents to a YouGov survey of tech workers citing the pool of local talent in the area as a factor making Manchester attractive to UK-based tech companies (DAM 22).

7.4 Firms can assimilate sector-specific knowledge through interactions with nearby firms in their sector. The benefits of agglomeration have persisted despite reductions in costs of transportation and transmitting data and knowledge (DAM 19). This is because some of the most important ideas that underpin technological innovation are tacit rather than explicitly codified. This tacit knowledge can only be shared through social interaction (DAM 23). The spatial element is crucial because while long distance communication is now much easier due to technological improvements, face-to-face interaction promotes greater trust which underpins strong relationships (DAM 24).

7.5 The clustering phenomenon is supported by a wide range of governments and international bodies. The World Bank has argued that clustering promotes export competitiveness due to location-specific externalities and synergies, which we describe below (DAM 25). The UK government's National Industrial Strategy emphasises the importance of clustering for innovation and notes that knowledge-intensive economic activity is increasingly performed in economic clusters (CD/D10). The IMF's World Economic Outlook in October 2019 argues that place-based policies including cluster promotion can help to increase regional equality agglomerating high-tech firms and research institutions (DAM 33). Statistical evidence of brownfield redevelopments in England shows that a site is more likely to be regenerated if adjacent sites are redeveloped (DAM 26).

7.6 The evidence demonstrates both the importance of clustering and agglomeration in the eyes of investors, who chose to locate near one-another, and the need for a comprehensive development plan to facilitate colocation.

Provision of high-quality infrastructure

7.7 Developing the right infrastructure is critical for encouraging inward investment. Infrastructure is key in attracting investment in manufacturing sectors. Ramos and

Mendes (2001, DAM 34), found that the location of firms is most influenced by proximity to national roads, motorways, railroad terminals, seaport and airports. Surveys of inward investors into UK Enterprise Zones in the 1990s found that an attractive physical environment, the availability of land, premises and good infrastructure were key factors in their location decision and contributed to subsequent growth (DAM 36). Two studies from the Netherlands also provide evidence that infrastructure is vital for industrial sites. Among 68 sites analysed, they found accessible sites had higher employment between 1998 and 2006 (DAM 35). Firm-level data from South Holland covering the period 1990-1996 shows that larger distance to transport infrastructure increases the probability that a firm will relocate (DAM 21).

7.8 Single ownership of the Order Land will enable a co-ordinated approach to infrastructure development, ensuring that the site meets the needs for investors in the most efficient way.

7.9 A study of industrial sites in England found that sites with fragmented ownership and management struggle to coordinate investment programmes (DAM 14). For instance, the collection of industrial sites in North East Enfield has suffered from a lack of formalised management, with smaller organisations attempting to fulfil the crucial role of coordination between businesses. The poor state of facilities across the sites is arguably a consequence of the fragmented management structure. In contrast, the case study of the Slough Trading Estate showed that the centralised management facilitated investment in buildings, public realm and transport infrastructure.

7.10 The Proof of Evidence of John McNicholas (STDC 2/2 Sections 4.29 - 4.32) shows that the provision of infrastructure depends on comprehensive ownership. He highlights some of the key infrastructure upgrades included in the Scheme:

- 1 the reinforcement of the existing highway corridor that runs through the STDC area as a primary infrastructure spine, accommodating road, rail and utilities corridors.

- 2 improvements to the existing freight rail infrastructure
- 3 the construction of new port infrastructure
- 4 private wire networks and associated power production facilities

7.11 He goes on to say that “*Comprehensive ownership and a co-ordinated approach to delivery of the Scheme as a whole will significantly increase the chances of successfully delivering the infrastructure corridor, which, in itself, will be a major selling point and attractor for the site; and this is emphasised in the Proof concerning market demand and market considerations, prepared by Guy Gilfillan, Document Ref: STDC5/2.*”

7.12 My assessment is that if, as described by John McNicholas, a lack of comprehensive ownership means that the Scheme is unable to ensure the optimum provision of quality infrastructure, this would reduce the attractiveness of the STDC Area to potential inward investors. In this case, the assumptions about occupancy and rental rates which underpin the economic benefits and the viability of the Scheme (described in Section 6.0) would become less viable.

A strong brand

7.13 A strong brand is a critical success factor in redevelopments, including the involvement of a public sector partner. Evidence from Manchester and Osaka show that scale, a strong brand and long-term vision are critical success factors in redevelopment of contaminated brownfield sites (DAM 27). In Manchester, successful projects were marketed as ‘flagship’ sites which necessitated consolidating parcels of land. In addition, developers in Manchester said that a public sector partner was critical to the project’s success. Interviews with development practitioners and site developers in Ontario, Canada suggested that place branding could be effective due to its ability to attract business investment (DAM 28).

7.14 My assessment is that a lack of comprehensive ownership would mean that STDC is less likely to ensure a strong brand for the STDC Area. This would reduce the

attractiveness of the STDC Area to potential inward investors. In this case, the assumptions about occupancy and rental rates which underpin the economic benefits and the viability of the Scheme (described in Section 6.0) may become less viable.

Aesthetics and safety

- 7.15 Green spaces and improved landscaping attract investment, customers and employees. There is strong evidence showing that people value the aesthetics of the local area they live and work in. As discussed in Section 3.12, an attractive physical environment is a key criterion in investment location decisions (DAM 36). The Centre for Economic and Social Regeneration showed that the creation of the National Forest in England was associated with a 4.1% increase in local jobs in the area (DAM 29). Green space has been showed to benefit mental health (DAM 30) and the Lanthwaite Grange industrial site in West Yorkshire found that landscaping improvements reduced crime by 70% in the following year (DAM 37).
- 7.16 The Proof of Evidence of John McNicholas (STDC 2/2 Section 2.24) draws attention to the concerns over safety on the land: *"This is the first example of a project of this nature and complexity being undertaken on the former SSI estate and it highlights markedly the hazardous nature and high-risk profile that need to be attributed to the ongoing safe management of the legacy, ageing former SSI assets, and, indeed, any proposals to decontaminate and demolish such facilities."* Previous studies have indicated the importance of a comprehensive approach to land remediation. One of the developers interviewed in the study of Manchester and Osaka (DAM 27) made this point clearly: *"It's predominantly about risk really, you can't part-decontaminate land in our experience, you have to go for the whole lot or you have to steer clear of it. It's impossible to do in small parcels."* Evidence from the European Commission (DAM 31) supports this view, with successful examples of contaminated brownfield redevelopment often being managed by a single entity (for example, Spaque's regeneration of the Cokerie Flemalle in Wallonia, DAM 32).

- 7.17 These results show the importance of STDC delivering the Scheme, which includes high-quality landscaping and open spaces (Proof of Evidence of John McNicholas, STDC 2/2, 4.7) and the need to mitigate the risks of investors being deterred by close proximity to unattractive, contaminated, unsafe or dirty land or industry (the so-called 'bad neighbour' effect) by bringing the land under comprehensive control.
- 7.18 My assessment is that a lack of comprehensive ownership and the inability of STDC to ensure an attractive and safe physical environment would reduce the attractiveness of the STDC Area to potential inward investors. In this case, the assumptions about occupancy and rental rates which underpin the economic benefits and the viability of the Scheme (described in Section 6.0) may become less viable.

Benefits of comprehensive ownership for securing Freeport status

- 7.19 The basic characteristic of a Freeport is that goods entering the Freeport are deemed not to have entered the domestic customs territory. This requires infrastructure investments to ensure that goods cannot be brought out of the Freeport into the domestic customs territory without being declared and without the relevant taxes and duties being paid. Most commonly, Freeports have a securely fenced area with goods only able to pass out of the zone and into the domestic territory through a customs checkpoint. Although a number of solutions have been deployed around the world to facilitate non-contiguous Freeports (and, indeed, Local Enterprise Partnerships in the UK are exploring options for these), including secure roads, container scanning and automatic number plate recognition ("ANPR"), the solutions are more complex and may entail higher costs.
- 7.20 It would increase the cost and complexity of a Freeport if a large area was designated extra-customs territory, but with a number of intra-customs territory enclaves dispersed across the zone. Common ownership, and the ability to designate a large and continuous zone as extra-customs territory, would therefore significantly enhance the attractiveness of the STDC Area for a potential Freeport.

Comprehensive ownership is required for the financial viability of the Scheme and to maximise the regional benefits

- 7.21 Of the 1752 acres in the Order Land, 1,470 acres will be redeveloped and produce rent. The remaining 282 acres in the Order Land will be redeveloped but is not assumed to produce rent (these 282 acres are primarily infrastructure areas).
- 7.22 In addition to these areas, the projected expenditure of the Scheme includes costs of developing land in the STDC Area but which is not part of the Order Land and will not be acquired by STDC, specifically investment in infrastructure (mostly roads and utilities) to connect the Redcar Bulk Terminal land with the infrastructure corridor, and costs of redeveloping the Coastal Community Use Zone.
- 7.23 The costs of redevelopment and upgrading infrastructure on land which does generate revenues to the Scheme can, therefore, only be recovered through revenues accruing from the 1,470 acres which will generate rental income. As these costs are fixed and must be incurred irrespective of the total size of land redeveloped for rent, they create an economy of scale, that is, the larger the area over which the Scheme must recover these costs, the less it must recover per acre per year. If STDC fails to secure all the land, it will generate less rental income to cover these and other fixed costs, such as the Keep Safe, Invest to Save and Tier 3 costs, reducing the viability of the Scheme as a whole.

8.0 Conclusion

8.1 My instructions are to:

- 1 Review the evidence provided to me, in particular the South Tees Regeneration Master Plan (“the Master Plan”) and the cash flow model prepared by the South Tees Development Corporation (“STDC”), and identify whether the proposed Scheme is likely to create economic benefits in the public interest
- 2 Identify the key assumptions which underpin these economic benefits
- 3 Identify whether there are any risks associated with these assumptions which might make the Scheme unviable or fail to deliver public benefits
- 4 Consider the extent to which the Scheme, and the public interest benefits, would be viable without the acquisition of the whole Order Land

Will the Scheme create economic benefits in the public interest?

8.2 As discussed in Section 4.0, above, the approach recommended by HM Treasury for appraising policies, programmes and projects is to undertake a Social CBA. This looks at the costs of implementing a project and the social value created based on market prices. In the case of the Scheme, this requires a comparison of the costs of implementing the Scheme with the revenues that it is projected to generate through rent, business rates and service charges. I find that the Scheme is expected to deliver significant social value, even when applying a generous allowance for optimism bias.

8.3 The approach recommended by HM Treasury in the Green Book does not recommend including economic impacts through job creation when considering social value at the national level. It does, however, recognise that these effects may be important when undertaking an appraisal of a project with a subnational focus. I have reviewed the performance of the Tees Valley economy and conclude there are compelling reasons to take into account such regional economic impacts. These reasons include the persistent higher than average levels of unemployment, the

impact of the closure of SSI Steelworks on the regional economy, the response from national government, including the establishment of STDC with a mandate to promote investment and employment within the region, and the designation of Durham and Tees Valley as an 'a' assisted area.

- 8.4 I provided an indicative estimation of the regional economic benefits of the Scheme, based on targets for job creation in the Master Plan and conservative assumptions about the persistence of jobs. Even with these conservative assumptions, the positive benefits to the regional economy are significantly greater than the net present social value of the Scheme from a national perspective. This is consistent with the objectives of STDC to promote opportunities in the regional economy.

What are the key assumptions underpinning the expected benefits?

- 8.5 The main assumptions which I have identified as potentially affecting the ability of the Scheme to deliver the economic benefits discussed in Section 4.0 are as follows:

- 1 The costs of implementing the Scheme are in line with STDC estimates. However, as I discuss in Sections 4.39 and 4.43, my calculation of the Net Present Social Value (NPSV) has already included an adjustment for optimism bias of 66%.
- 2 The revenues generated by the Scheme are in line with STDC projections. In particular, this requires that there is (a) sufficient interest from investors in occupying the Order Land so that occupancy is in line with STDC's assumptions, and (b) that the rental rates these investors pay (in £ per acre) are in line with STDC's assumptions.
- 3 Finance is available to STDC to cover up front investment for the redevelopment of the STDC Area.

- 4 When considering the regional economic benefits, the jobs created are additional to the area (i.e. would not have been created without the Scheme) and they generate GVA per employee at or above the national average.

Are there any risks associated with these assumptions which might make the Scheme unviable or fail to deliver public benefits?

- 8.6 The key assumptions required to deliver the economic benefits relate to the costs of implementing the Scheme, the availability of finance to support the temporary cash deficit of the Scheme, and the take up of available land by rent and employment generating occupiers.
- 8.7 The assumptions around costs have been provided to me by STDC. Whilst I have not attempted to verify or benchmark these costs, I have included a generous optimism bias adjustment factor in my calculations, uplifting costs by 66%.
- 8.8 I have reviewed the funding available to STDC and the expected cash surplus the Scheme is expected to generate. My conclusion is that the Scheme is expected to generate a sufficiently high return to attract private sector investment of the sort summarised in the Proof of Evidence of John Knowles to close any gap between funding requirements and the availability of public funds.
- 8.9 These returns, the revenues which constitute the benefits in the national NPSV and the ability of the Scheme to generate regional economic benefits through increased employment are all predicated on the assumption that there is significant interest from investors to occupy the land. Forecasting inward investment under different scenarios is very hard to do with any degree of robustness. However, my conclusion is that there is strong evidence to support a high level of interest, uptake and occupancy. This includes the evidence presented in the Proof of Evidence of Guy Gilfillan of a strong pipeline, the unique qualities of the STDC Area set out in the Proof of Evidence of John McNicholas, and the prospects of the STDC Area gaining Freeport status.

8.10 The assumptions used in the estimation of regional economic benefits through job creation mean that the projected increase in employment (of up to 4,348 in any given year) is modest relative to the size of the land, the existing pipeline, and the slack in the regional labour market, but will deliver significant regional benefits.

8.11 My conclusion is that the assumptions which underpin the calculation of economic benefits from both the national and regional perspective are well supported and that the Scheme is viable.

Would the Scheme, and the public interest benefits, be viable without the acquisition of the whole Order Land?

8.12 I have reviewed the evidence on the viability of the Scheme if STDC were unsuccessful in acquiring the rights to the whole of the Order Land. My conclusion is that failure to do so could materially impact the viability of the Scheme.

8.13 The Scheme includes several fixed costs, which do not vary with the size of the developable land which generates rent. These include infrastructure costs relating to the infrastructure corridor, STDC overheads, and the redevelopment of the Coastal Community Leisure Zone. Recovering these costs over a greater rent-yielding area creates an economy of scale.

8.14 Furthermore, if STDC were to fail to secure the whole of the Order Land, the Scheme is less likely to ensure optimum zoning and agglomeration opportunities, less likely to ensure the optimum provision of quality infrastructure, less likely to create a strong brand, and less likely to provide an attractive and safe physical environment. These are all likely to negatively impact the attractiveness, uptake and occupancy which are required for the Scheme to deliver economic benefits.

8.15 My conclusion is that, to maximise the probability of delivering positive economic benefits to the national and regional economy, comprehensive ownership of the Order Land is required.

9.0 Documents Relied upon

Number	Document
DAM 1 2018 HM Treasury Green Book	HM Treasury (2018) The Green Book: Central Government Guidance on Appraisal and Evaluation https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf
DAM 2 - DCLG Appraisal Guide	Department for Communities and Local Government (2016) The DCLG Appraisal Guide https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/576427/161129_Appraisal_Guidance.pdf
DAM 3 – BEIS Single Departmental Plan	Department for Business, Energy and Industrial Strategy single departmental plan, June 2019 https://www.gov.uk/government/publications/department-for-business-energy-and-industrial-strategy-single-departmental-plan/department-for-business-energy-and-industrial-strategy-single-departmental-plan-june-2019
DAM 4 – Clean Growth Strategy	HM Government (2017): The Clean Growth Strategy: Leading the way to a low carbon future https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf
DAM 5 – Northern Powerhouse Strategy	HM Government (2016) Northern Powerhouse strategy https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/571562/NPH_strategy_web.pdf
DAM 6 – CBI Regional Productivity	CBI (2017) Unlocking regional growth: understanding the drivers of productivity across the UK's regions and nations https://www.cbi.org.uk/media/1170/cbi-unlocking-regional-growth.pdf
DAM 7 – HM Treasury Fixing the Foundations	HM Treasury (2017) Fixing the foundations: Creating a more prosperous nation https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/443898/Productivity_Plan_web.pdf
DAM 8 – Official Labour Market Data	Labour Market Profile – Tees Valley https://www.nomisweb.co.uk/reports/lmp/comb/1853882374/report.aspx#tabempunemp

DAM 9 – Official Labour Market Data	Nomis Official Labour Market Statistics, Economically Active - Time Series, All people - Economically active - Unemployed Tees Valley https://www.nomisweb.co.uk/reports/lmp/lep/1925185563/subreports/ea_time_series/report.aspx?
DAM 10 – Official Labour Market Data	Nomis Official Labour Market Statistics, Economically Active - Time Series, All people - Economically active – In Employment Tees Valley https://www.nomisweb.co.uk/reports/lmp/lep/1925185563/subreports/ea_time_series/report.aspx?
DAM 11 – BBC News	BBC News (12 October 2015) SSI Redcar Steelworks to be shut https://www.bbc.co.uk/news/uk-england-34509329
DAM 12 – BIS Assisted Areas	Department for Business, Innovation and Skills (2014): AN INTRODUCTION TO ASSISTED AREAS https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/365657/BIS-14-1152-An-introduction-to-assisted-areas.pdf
DAM 13 – 2016 Legislation Assisted Areas	EXPLANATORY MEMORANDUM TO THE ASSISTED AREAS (AMENDMENT) ORDER 2017 http://www.legislation.gov.uk/ukxi/2017/173/pdfs/ukxiem_20170173_en.pdf
DAM 14 – Regeneris Report	Regeneris Consulting (2016) - Industrial Estate Research https://www.london.gov.uk/sites/default/files/a01568_industrial_estate_final_report_v2.pdf
DAM 15 – Vivid Free Ports	Vivid Economics (2019) – A Free Zone Policy fit for the UK https://www.london.gov.uk/sites/default/files/a01568_industrial_estate_final_report_v2.pdf
DAM 16 – Business Rates	Business Rates https://www.london.gov.uk/sites/default/files/a01568_industrial_estate_final_report_v2.pdf
DAM 17 – Employment density	Office of Project & Programme Advice and Training, Homes and Communities Agency (2010) Employment Densities Guide https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378203/employ-den.pdf
DAM 18 – Plot Ratios	Greater London Authority (2018) – Industrial Land Review https://www.london.gov.uk/sites/default/files/26_ilraddendum_2018.pdf

DAM 19 – NERA Agglomeration effects	Glaeser (2010): Agglomeration Effects https://www.nber.org/chapters/c7977.pdf
DAM 20 – Innovation and Agglomeration economies in the Netherlands	Van Oort (2002) – Innovation and agglomeration economies in the Netherlands https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9663.00207
DAM 21 – De Bok and Van Oort (2011) Agglomeration economies	De Bok and Van Oort (2011) Agglomeration economies, accessibility and the spatial choice behaviour of relocating firms https://www.jtlu.org/index.php/jtlu/article/download/144/161
DAM 22 – Manchester a Connected Future	WiredScore (2016): Manchester A Connected Future https://cdn2.hubspot.net/hubfs/2472771/UK%20and%20Ireland/Manchester_Report_Digital_Final.pdf
DAM 23 – Marshall versus Jacobs	Van der Panne (2004): Agglomeration Externalities: Marshall versus Jacobs https://www.researchgate.net/publication/24058032_Agglomeration_Externalities_Marshall_versus_Jacobs
DAM 24 – Rodrigues- Pose and Crescenzi 2008	Rodrigues-Pose and Crescenzi (2008): Research and development, spillovers, innovation systems, and the genesis of regional growth in Europe http://eprints.lse.ac.uk/23326/1/_Libfile_repository_Content_Crescenzi,%20R_Crescenzi_Research_%20development_spillovers_2008_Crescenzi_Research_%20development_spillovers_2008.pdf
DAM 25 – World Bank (2009)	World Bank (2009): Clusters for Competitiveness http://siteresources.worldbank.org/INTRANETTRADE/Resources/cluster_initiative_pub_web_ver.pdf

DAM 26 – Longo and Campbell (2017)	Longo and Campbell (2017): The Determinants of Brownfields Redevelopment in England https://pureadmin.qub.ac.uk/ws/portalfiles/portal/18033227/The_determinants_of_Brownfields.pdf
DAM 27 – Dixon, Otsuka & Abe (2011)	Dixon, Otsuka & Abe (2011): Critical success factors in urban brownfield regeneration: an analysis of 'hardcore' sights in Manchester and Osaka during the economic recession (2009 – 10) https://journals.sagepub.com/doi/10.1068/a43468
DAM 28 – Cleave et al (2016)	Cleave, Arku, Sadler & Gililand (2016): The role of place branding in local and regional economic development: bridging the gap between policy and practicality https://www.tandfonline.com/doi/pdf/10.1080/21681376.2016.1163506?needAccess=true&
DAM 29 – CESR (2004)	Centre for Economic and Social Regeneration (2004): Much more than trees 2: Measuring the social and economic impact of The National Forest https://www.nationalforest.org/sites/default/files/components/downloads/files/Much%20More%20Than%20Trees%202%20Measuring%20the%20social%20and%20economic%20impact%20of%20The%20National%20Forest%20%28123kb%29.pdf
DAM 30 – Barton and Rogerson (2017)	Barton and Rogerson (2017): The importance of greenspace for mental health https://www.ncbi.nlm.nih.gov/pubmed/29093955
DAM 31 – European Commission	European Commission (2015): Remediated sites and brownfields – Success stories in Europe https://publications.jrc.ec.europa.eu/repository/bitstream/JRC98077/lbna27530enn.pdf
DAM 32 – Spaque	Spaque - The rehabilitation of the Cokerie Flemalle site in Flemalle and Seraing http://www.cokerie-flemalle.spaque.be/documents/CokerieFlemalleen2014.pdf
DAM 33 – IMF(2019)	IMF (2019): World Economic Outlook, October 2019 https://www.imf.org/en/Publications/WEO/Issues/2019/10/01/world-economic-outlook-october-2019
DAM 34 – Ramos and Mendez (2001)	Ramos and Mendez (2001): Avaliação da aptidão do solo para localização industrial: O caso de Valença http://repositorium.sdum.uminho.pt/bitstream/1822/25111/1/Pag_7-30.pdf
DAM 35 – de Voor & de Groot (2008)	De Voor & de Groot (2008): Agglomeration externalities and localized employment growth: the performance of industrial sites in Amsterdam https://research.vu.nl/ws/portalfiles/portal/2358918/08033.pdf

DAM 36 – Potter & Moore (2000)	Potter & Moore (2000): UK Enterprise Zones and the Attraction of Inward Investment https://journals.sagepub.com/doi/10.1080/00420980020080141
DAM 37 – CSI (2008)	CSI (2008): Creating a Setting for Investment https://orbi.uliege.be/bitstream/2268/64180/1/CSI6%20%281%29.pdf
DAM 38 – Mott MacDonald (2008)	Mott MacDonald (2002): Review of Large Public Procurement in the UK https://webarchive.nationalarchives.gov.uk/20090417202704/http://www.hm-treasury.gov.uk/d/7(3).pdf
DAM 39 – ONS GVA per employee	ONS (2019): Dataset: Subregional productivity: labour productivity indices by city region https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/subregionalproductivitylabourproductivitygvaaperhourworkedandgvaaperfilledjobindicesbycityregion
DAM 40 – Freeport announcement	HM Government (2019): Trade Secretary announces Freeports Advisory Panel will ensure UK is ready to trade post-Brexit https://www.gov.uk/government/news/trade-secretary-announces-freeports-advisory-panel-will-ensure-uk-is-ready-to-trade-post-brexit
DAM 41 – ‘at least’ 10 Freeports	Moore (2019): LISW: ‘Brexit brings opportunities’ for UK free port model https://www.rivieramm.com/news-content-hub/news-content-hub/lisw-lsqubrexit-brings-opportunitiesrsquo-for-uk-free-port-model-56174
DAM 42 – Sector deals	BEIS (2019): Introduction to Sector Deals https://www.gov.uk/government/publications/industrial-strategy-sector-deals/introduction-to-sector-deals
DAM 43 – Export Strategy	HM Government (2018): Export Strategy: supporting and connecting businesses to grow on the world stage https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/737201/HMG_Export_Strategy.pdf