Tees Valley Combined Authority
Darlington Station

Outline Business Case

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Executive Summary

This document and its series of appendices comprise the Outline Business Case for major improvements to Darlington Station. The aspiration is for an enhanced rail gateway that can accommodate future demands for national, regional and local passenger rail services as well as freight.

As this submission clearly demonstrates, there is a very strong and robust case for investment in Darlington Station. Therefore, it is recommended that the scheme is included in the Rail Network Enhancements Pipeline, so that the many benefits that it will deliver across the Tees Valley City Region and the wider national rail network, can be realised as soon as possible. Confirmation of a funding allocation for the next stage of works through a "Decision to Design" would allow progression towards a "Decision to Deliver" at pace. The Tees Valley Combined Authority (TVCA) plan to release the £25 million contribution early to commence the station gateway element of the scheme to push forward the ambitious plans set out in the Devolution Deal in 2015.

There is a strong and clear strategic need for the scheme, given that the East Coast Main Line north of York is now at or very close to capacity with train operators struggling to deliver franchise commitments as a direct result. These capacity issues will only get worse in the future and the existing layout at Darlington station exacerbates problems with capacity and resilience. The capacity and capability of the passenger and freight rail networks that serve the Tees Valley is now becoming a serious concern in terms of the impact this will have on future economic growth of not just Darlington and the Tees Valley, but also the North East of England.

There is a requirement to improve capacity and resilience at Darlington in order to enable the desired frequency of services on the East Coast Main Line between York and Newcastle in the future. The analysis done to date concludes that *"a potential solution … is to double track Darlington South Jn and install another platform east of Darlington"*, thereby removing local services from having to cross the East Coast Main Line. This crossing movement results in significant time delays and constrains the capacity for national rail services. It causes issues in relation to effective service connections, and reduces the potential for new national services and any ability to consider more frequent local services.

In addition, the passenger experience and the facilities offered by Darlington Station should be representative of the economic ambitions of the area and its status as a key interchange for the Tees Valley, but this is not currently the case. This is also particularly important given the enhanced role that Darlington will play in welcoming visitors to the area in 2025 to mark the 200th anniversary of the first passenger railway journey between Darlington and Stockton.

Working with the rail industry, an option assessment process has been undertaken with the support of a range of stakeholders, including Network Rail and Transport for the North, to identify a preferred option. This option comprises a package of improvements that will achieve the agreed objectives and provide a holistic solution to the identified national, regional and local passenger and freight issues.

The preferred option identified for the Darlington Station improvements includes: two new platforms on the east side of the existing station to accommodate existing and future Tees Valley local services; a new platform adjacent to the Up Goods Line, to be used by southbound long distance, HS2 and Northern Powerhouse Rail (NPR) services; a new station building with multi-modal connections to service the new platforms; a new accessible footbridge linking the new platforms and station building with the existing station; a new multi-storey car park adjacent to the new station building; and an enhancement to the portico and transport interchange facilities on the western side of the station. An indicative order of magnitude cost has been prepared for the preferred option of £84.95 million – this includes a quantified allowance for risk. The equivalent outturn cost, allowing for inflation at the appropriate levels, is £95.96 million.

An initial phase has been identified that includes all of the above elements of the overall vision, except the new platform for long distance, HS2 and NPR services. However, the first phase does include the provision of the foundations and structures for the new platform in order to avoid excessive disruption, and therefore additional cost, as later phases are implemented.

The preferred option goes beyond improvements to Darlington Station itself. The enhanced station gateway will complement the current and planned developments in Darlington town centre and will be integrated with the bids being developed for the High Streets and Stronger Towns Funds.

There are a range of quantifiable benefits as a result of the preferred option, but three of the most important ones are: the journey time reductions facilitated by the scheme; the improvement in train service reliability; and the associated reduction in actual delay payments delivered as a result of the layout changes. Network Rail has undertaken some analysis of these benefits and the resulting economic analysis provides confidence that a benefit : cost ratio of above 2.0 is achievable even with conservative assumptions around these key benefits, representing High value for money.

In developing the scheme, TVCA has considered separate delivery routes and contracts for each element of the scheme. The suggested approach would see the operational railway and station enhancements elements funded by DfT through the Rail Network Enhancements Pipeline and delivered by Network Rail. The station gateway elements (including the new car park) would be funded and led by TVCA in partnership with Darlington Borough Council. To ensure continued co-ordination of the different elements of the scheme, it is proposed to retain the current Darlington Station Programme Board, chaired by the Tees Valley Mayor. The Board would oversee the co-ordination of the various elements, providing a co-client relationship in the next stage of works between the two funding parties.

A project plan has been produced setting out all of the key project tasks and their duration, the interdependencies between each of the tasks, and critical milestones and gateways. This plan shows the completion of the scheme in December 2024, in time for the 2025 celebrations.

1 Introduction

1.1 Overview

The economic geography and peripheral nature of the North East region as a whole is one of the greatest challenges, and this is particularly true for the Tees Valley as it contains a number of centres within a small geographical area. Much of the recent activity from the Tees Valley Combined Authority (TVCA) and the Local Authorities has been aimed at addressing the challenges of job losses in the industrial economy, issues of high unemployment and social exclusion and the difficulties within the local housing market. However, whilst the local economy now has stronger foundations as a result, further targeted intervention is required in order to achieve the ambitious growth targets.

The lack of a single dominant commercial centre has transport implications and means that good interconnectivity is vital for the Tees Valley to function effectively. The Tees Valley Strategic Economic Plan (SEP) and Strategic Transport Plan (STP) clearly articulate the need for better transport connections across the City Region, providing businesses and residents with a high quality public transport network (including rail) that is frequent, integrated, reliable and offers a real alternative to the private car in order to be cleaner and more sustainable.

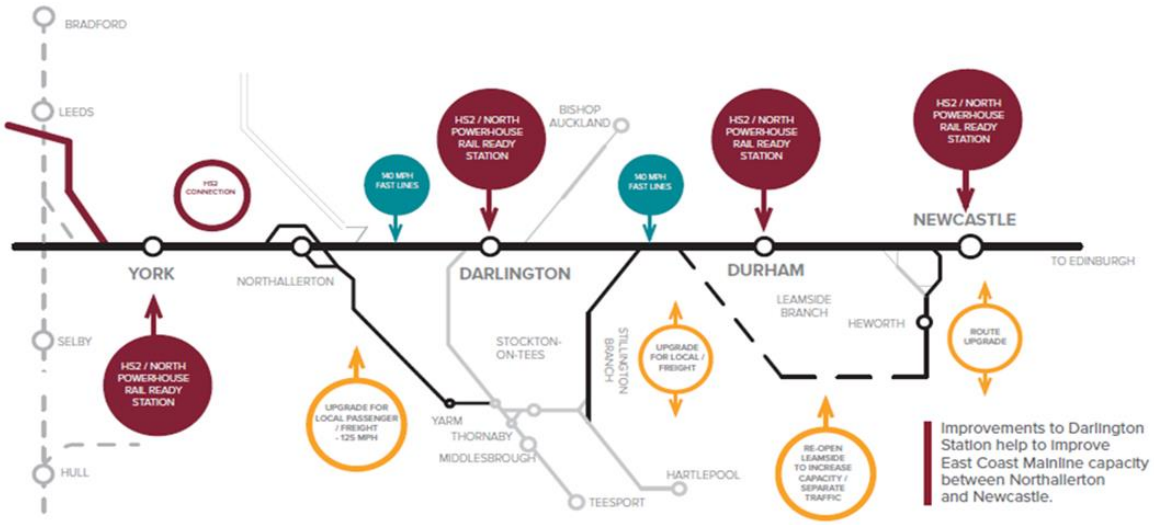
This will also boost competitiveness through improved connectivity across the North, as identified in Transport for the North's (TfN's) own Strategic Transport Plan, linking key sectors and leading industries with other centres of expertise outside of the Tees Valley. An improved rail network to, from and within the Tees Valley will also provide more access to global markets, increasing the capacity for growth and creating more jobs for the people of the City Region – this is particularly important as 70% of major local businesses are internationally owned.

1.2 Business Case

This document and its series of appendices comprise the Outline Business Case (OBC) for major improvements to **Darlington Station**. The aspiration is for an enhanced rail gateway that can accommodate future demands for national, regional and local passenger rail services as well as freight. Both of these needs were first articulated in the Darlington 2025 Masterplan, a summary of which is included at Appendix A.

Darlington is one of the Tees Valley's principal rail gateways and is strategically located on the East Coast Main Line (ECML), as shown in Figure 1.1. It is a regional transport hub that not only serves the Tees Valley but also a much wider catchment including South Durham and North Yorkshire, providing access to key rail services.

Figure 1.1: Darlington as a Key Rail Gateway on the East Coast Main Line



Darlington is the birthplace of the modern railway system and 2025 marks the 200th anniversary of the first passenger railway journey between Darlington and Stockton. With development work on both HS2 and Northern Powerhouse Rail (NPR) gathering pace, now is the time to create a modern rail hub for a modern economy in the Tees Valley area.

The scheme will address current issues and accommodate the anticipated increase in national, regional and local services planned and will generate additional revenue for the rail industry. Investment in the rail infrastructure will also unlock a significant opportunity for commercial and residential redevelopment around Darlington Station.

1.3 Document Content and Structure

This document has been prepared in accordance with Transport Business Case guidance, Strategic Case Supplementary Guidance: Rebalancing Toolkit and the Transport Appraisal Guidance (TAG) issued by the Department for Transport (DfT), as well as guidance issued by Network Rail. It also recognises the requirements of the Rail Network Enhancements Pipeline (RNEP), HM Treasury's Green Book and associated supplementary guidance on public sector business cases.

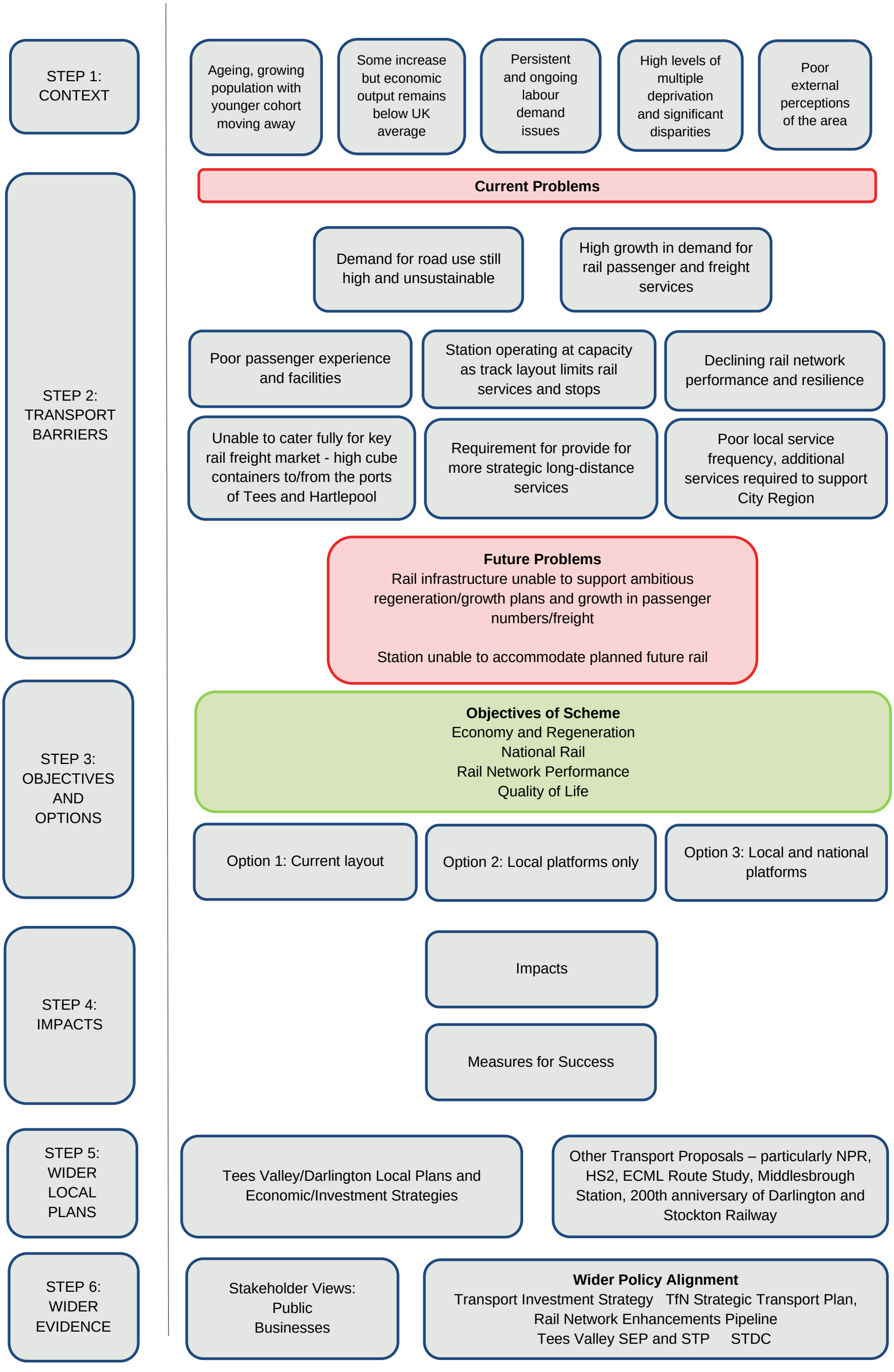
2 The Strategic Case

This chapter of the OBC defines the policy and business strategy alignment, examines the existing characteristics of the local area and the problems identified (both current and future), identifies a series of scheme objectives and sets out the options that have been considered. It therefore demonstrates the case for change – that is, the rationale for making the investment.

It has been prepared with particular reference to the DfT's Strategic Case Supplementary Guidance: Rebalancing Toolkit, published in December 2017, which is designed to help authors of strategic cases assess how a programme or project fits with the objective of spreading growth across the country and also introduces a framework for presenting the rebalancing case more consistently.

Figure 2.1 summarises the justification for the scheme in line with the six steps set out in the Rebalancing Toolkit, each of which is explored in more detail in the following sections.

Figure 2.1: Summary of the Strategic Case



2.1 Step 1: Setting the Context

2.1.1 Tees Valley Area Profile

Covering over 3,300 square miles, the Tees Valley comprises the five local authority areas of Darlington, Stockton-on-Tees, Hartlepool, Middlesbrough, and Redcar & Cleveland. The area represents 1.2% of the population of England and 0.6% of the English land mass. It is highly urbanised, with 90% of the population living in urban areas. The population is concentrated in the five main town centres (35%) with the remaining population located in the suburbs, in smaller settlements, and some 10% of the total in rural areas.

Demographic Context

The Office of National Statistics' mid-2017 population estimate of the Tees Valley is 672,500 of whom:

- 130,400 people are aged 0-15 (19%);
- 415,600 people are aged 16-64 (62%); and
- 126,500 people are aged 65 and over (19%).

Although there has been an upward trend in the size of the population since 2000, population growth has lagged below that in the North of England and England as a whole. The Tees Valley population is projected to continue its long term growth seen since the start of the millennium of approximately 1,000 per year until 2020, growth is then projected to slow both locally and nationally reaching around 680,600 by 2036. By 2037, the population is expected to increase by 1.2% compared to a 10% rise nationally and a 5% rise across the North of England.

The Tees Valley age profile is also older than in the North of England and England, demonstrated by a higher median age (41.1 in Tees Valley, compared with 40.6 and 39.8 respectively), and a lower old age dependency ratio (3.1 persons of working age for every person of state pensionable age in Tees Valley, compared with 3.2 and 3.3 retrospectively). There is an ageing workforce, exacerbated by the high percentage in the 18-20 and 24-29 age cohort who currently choose to move away from the Tees Valley.

Although there is projected growth, it is not expected in all age groups. The working age population (aged 16-64) is predicted to be almost 23,000 lower in in 2037 at 57%, down from 62% in 2017. Conversely, there will be an increase in the proportion of over 65s, with the percentage of the population over the retirement age expected to grow from 19% in 2017 to a quarter in 2037. Coupled with the fall in working age

population, this will bring skills shortages when experienced and highly skilled staff leave the workforce. There will also be implications for health services as pressures increase.

To ensure that the proposed economic growth and additional jobs envisaged in the SEP are delivered will require more inward migration from other population centres to counter the decrease in working population or the retention of younger people entering the job market. This will mean the transport network will have to cope with a greater demand for travel to/from and around the City Region. These additional travel demands will exacerbate existing issues on the rail network described later in this section. The improvements proposed at Darlington Station are an important step in providing a national, regional and local rail network that is fit for the future.

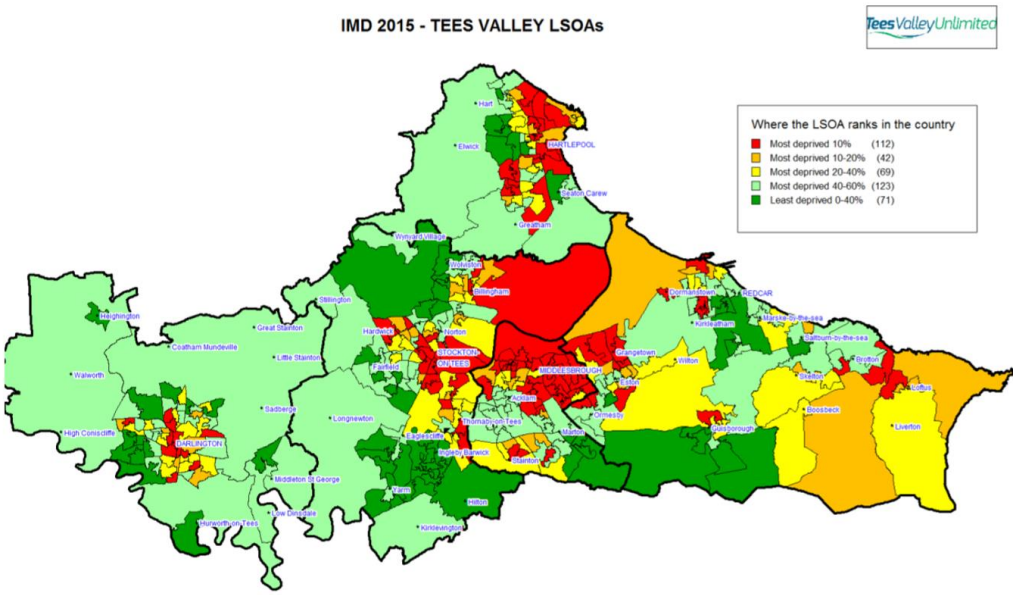
Social Context

Whilst the population of the Tees Valley is predominantly White British (93%), the Tees Valley is home to a small Black and Minority Ethnic (BAME) community with Middlesbrough having an ethnic make-up that more closely reflects the national picture (86% of Middlesbrough's population is White British compared with 80% of England's).

There are still high levels of severe disadvantage across Tees Valley. The Index of Multiple Deprivation combines different aspects of deprivation, including income, employment, education and skills, health and disability. Compared with other Local Enterprise Partnership (LEP) areas, Tees Valley has the second largest proportion of lower super output areas (LSOAs) within the most deprived 10% in England, at just over a quarter (27%). Compared with other highly deprived LEP areas, Tees Valley also has large numbers of LSOAs that are within the 20% least deprived and ranks third out of the 39 LEPs in this respect.

However, looking at the deprivation at LEP area level hides the diversity of the City Region. There are multiple pockets of severe deprivation in Tees Valley, with one area ranking the 55th most deprived in the country, but also areas that have been ranked within the least deprived in the country. In addition, whilst a much larger proportion of LSOAs are within the most deprived 10% than the national average, the numbers within the second and third deciles match the national average. The number of LSOAs which are within the least deprived in the country has been growing over time, indicating that the polarity within Tees Valley is increasing. The disparities in levels of deprivation is illustrated in Figure 2.2.

Figure 2.2: Distribution of LSOA Deprivation Scores across Tees Valley



The Tees Valley has higher death rates than the national average – by 11% - for both Males and Females – this is equivalent to around 625 extra deaths each year. All Tees Valley Local Authorities have death rates above the national average. Standard Mortality Rates (SMRs) are a strong indicator of deprivation and all the results, with few exceptions, follow the pattern of high SMRs in deprived areas and low SMRs in more affluent areas.

Unemployment is a persistent issue, with youth unemployment, deprivation and barriers to work being particular problems. Long term unemployed people face multiple and complex barriers when accessing work.

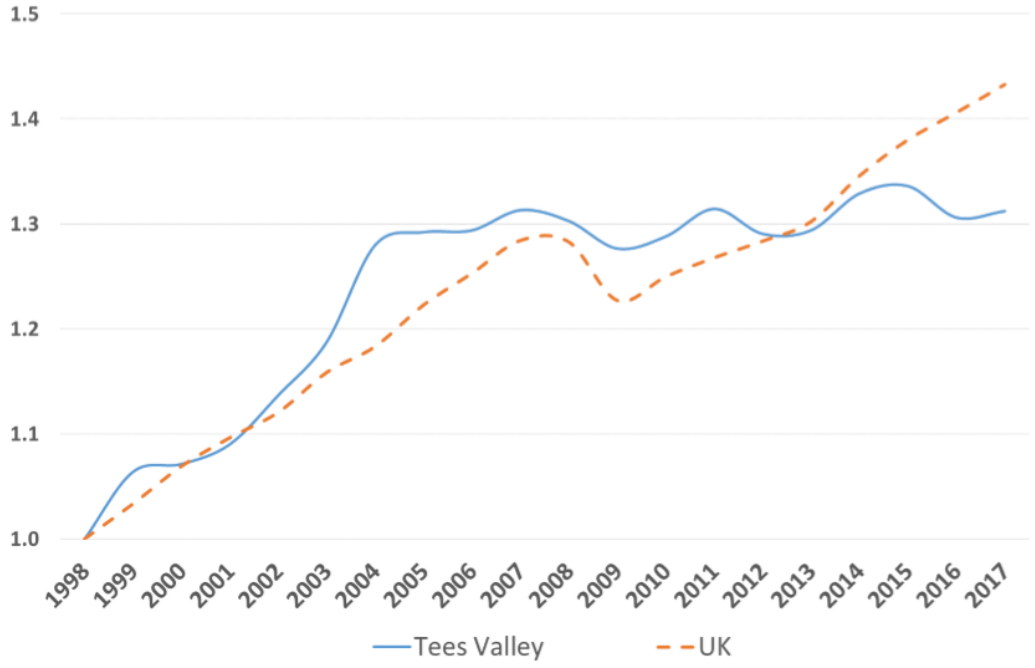
To reduce unemployment, it is vital to ensure education, training and job opportunities are easily accessible, particularly in the identified growth and high demand sectors. Increasing the mobility of residents will help to support the workforce offer of the Tees Valley – it will increase the accessibility of employment sites and contribute to releasing capacity on the transport network to accommodate future development.

There is the opportunity to increase the number of people in employment by ensuring easy and affordable access to jobs, education and training by providing a high quality, cleaner, quick, affordable, reliable, integrated and safe transport network for people and freight. Providing a fitting rail gateway for local, regional, pan-regional and national trips is a crucial element of such a network.

Economic Context

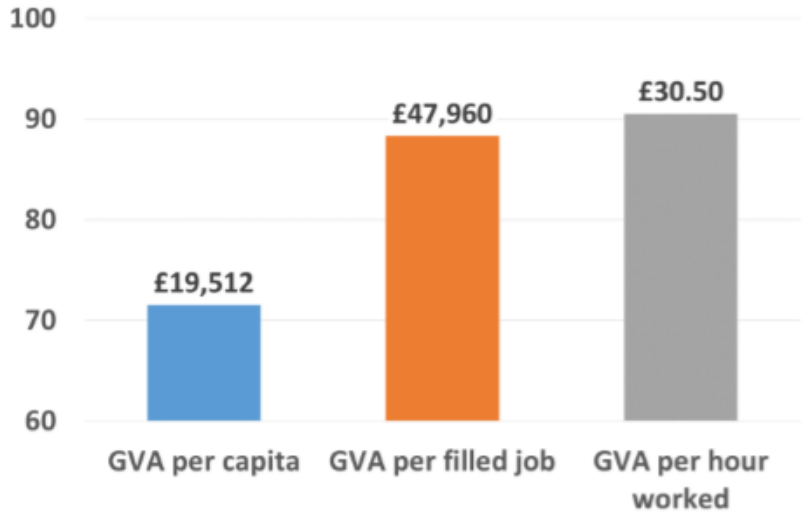
Total economic output (as measured by GVA) from the Tees Valley stood at £13.1 billion in 2017, growth of £60 million or a 0.5% increase on 2016. However, this is significantly below the UK's growth rate of 1.9% and also the North of England's 1.5% increase. Tees Valley GVA accounts for 0.8% of England's total GVA (0.7% for the UK). The annual change in GVA for the Tees Valley is shown in Figure 2.3.

Figure 2.3: Real Terms GVA Index (1998=1) in the Tees Valley and UK



The City Region has a significant productivity challenge, particularly in relation to GVA per head of population, illustrated in Figure 2.4. At £19,512 per annum, the Tees Valley's GVA per capita was some 71.5% of the UK rate in 2017, representing a GVA gap of £5.2 billion - this gap has increased by 50% in real terms since 2009. This output gap results from Tees Valley residents having relatively low economic activity and employment rates, a small pool of working age people and lower productivity.

Figure 2.4: Tees Valley Productivity Indices (2017)

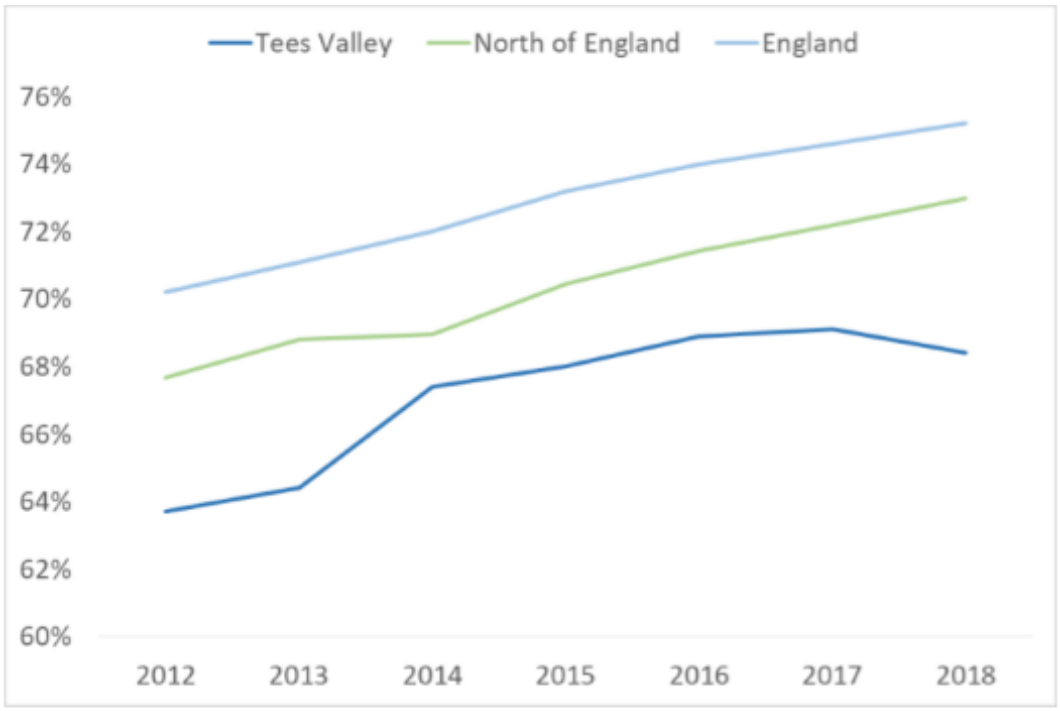


Whilst overall GVA is low, GVA per employee in the production sector (£86,000 in 2014) is well above the LEP average of £76,800, and other major LEP geographies such as Leeds, Manchester and Birmingham. Production industries (such as process or advanced engineering) contribute over 50% more of Tees Valley's economic output than the sector does for England as a whole. Both Construction and Public Services also account for a higher share of the area's total GVA than they do nationally. Professional & Business Services and to a lesser extent Other Private Services, including Culture & Leisure, Logistics, Wholesale & Retail, IT and Media contribute relatively less to the Tees Valley's output than in England as an average.

There were 17,230 enterprises in Tees Valley in 2018, down a little (270 lower) on the year before (17,500). This means that Tees Valley now has the lowest business density rate of any LEP area, with just 415 enterprises per 10,000 working age residents in 2018 – 65% of the UK rate (643). This represents an enterprise gap of around 9,500 businesses compared to the UK. Whilst Tees Valley is closer to the North of England average rate of 542, this still represents a Tees Valley to North of England enterprise gap of over 5,000 firms.

The Tees Valley resident employment rate peaked in 2017 at 69%, whilst nationally and regionally the rate continues to rise. Over the last year the Tees Valley rate has fallen by 0.7% (4,500 fewer residents in employment) compared to a 0.6% rise nationally and a 0.8% rise across the North of England. 280,300 Tees Valley residents aged 16-64 were employed in 2018, 68.4% of the working age population, compared to 75.2% nationally. Figure 2.5 illustrates the recent trends in the employment rate.

Figure 2.5: Employment Rate Trends (2012 - 2018)



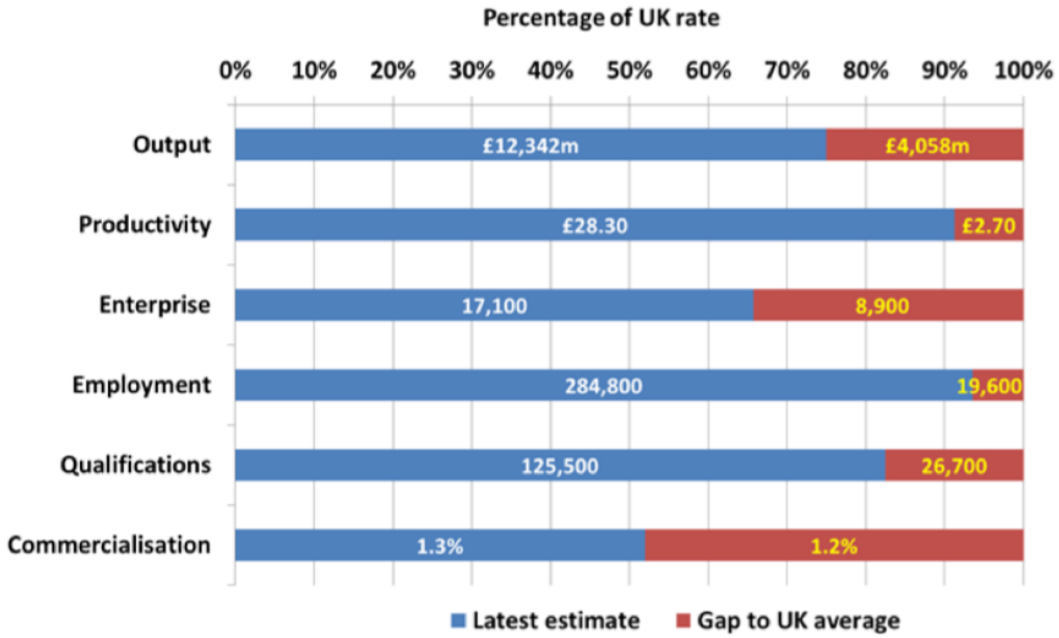
Source: ONS Annual Population Survey (APS)

In 2018, 4.1% of Tees Valley residents aged 16-64 were claiming either Job Seekers Allowance or Universal Credit (and required to seek work), almost double the national average of 2.3%. This rises to 6.6% for those aged 18-24, compared to 3.2% nationally. Despite this, actual unemployment numbers have halved over the past five years.

The Tees Valley historically has a low percentage of residents employed in high value occupations compared to the national average – with 38.6% employed in high value occupations in 2017 compared to 42.2% nationally, 3.6% below the national average compared to 4.5% in 2013. Residents are less well qualified than many other parts of the country – in terms of Level 4+ qualifications the City Region needed an additional 34,300 residents qualified to that level to match the UK rate in 2017.

A summary of these key economic indicators, and the gaps to the national average, is shown in Figure 2.6.

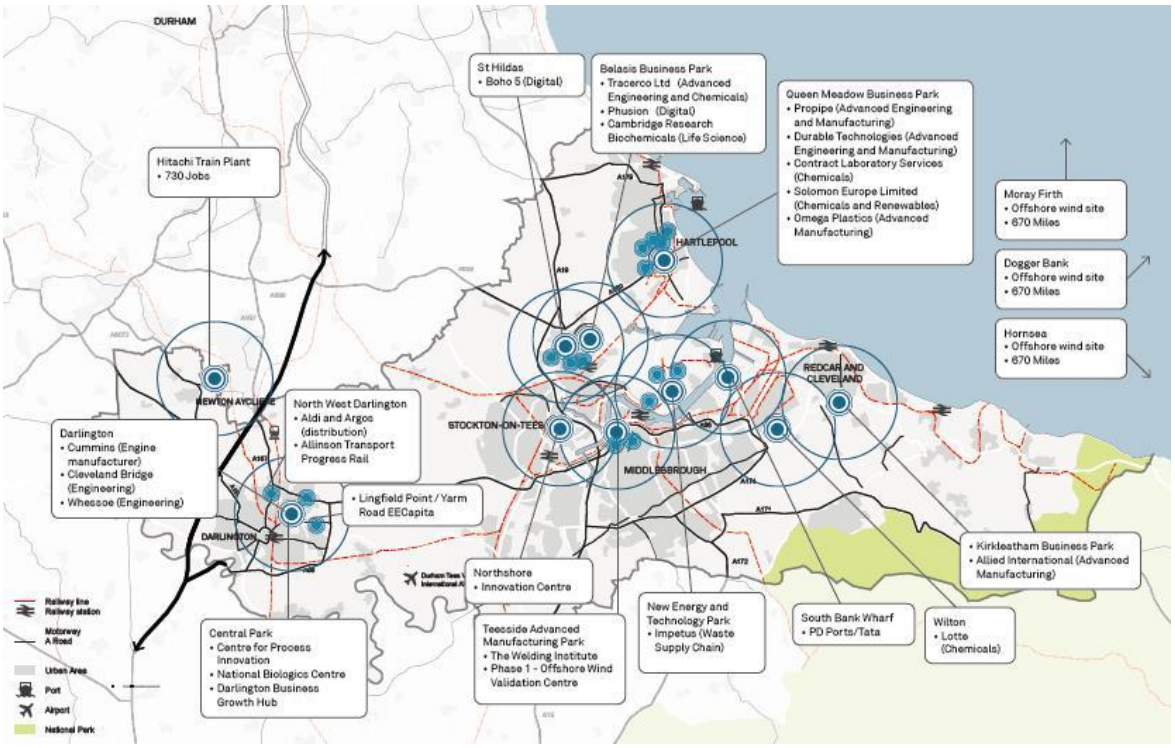
Figure 2.6: Summary Economic Indicators



Despite these issues, the Tees Valley has significant strengths. It has the fourth highest proportion of businesses undertaking product or service innovation in the UK and it is part of the only continuous net exporting region of goods in the UK with additional opportunities to pursue. The Tees Valley has also been ranked in third place in the UK for business expansion of existing companies, and business start-up rates continue to outperform the UK average.

The TVCA has ambitious plans to grow the City Region economy over the next ten years, aiming to create 25,000 new jobs and 23,000 new homes, making the Tees Valley an even better place for residents and businesses. To deliver on these ambitions, the TVCA recognises a need to build on existing strengths and world-class expertise in areas such as advanced manufacturing (particularly oil and gas, metals and automotive), chemicals and process and logistics, and invest in growing capability in new industries - biologics, subsea, digital/creative and the low carbon economy. Businesses within these sectors are spread right across the City Region, as shown in Figure 2.7.

Figure 2.7: Key Tees Valley Business Locations



There are also a wide range of cost-effective sites and premises across the Tees Valley, with a number of Enterprise Zone sites and a total of 423 hectares available for new business investment that offer financial incentives, as well as simplified planning and superfast broadband. The sites include both new and established business and enterprise parks, plus large cleared industrial sites with access to utilities, port services and logistics.

The existing rail network in the Tees Valley serves all of the Enterprise Zones and also areas of all four prime capabilities from the Northern Powerhouse Independent Economic Review, including the Hitachi plant at Newton Aycliffe, Central Park, North Shore Innovation Centre and South Bank Wharf.

Despite the clear opportunities for economic growth, the ageing population implies labour supply constraints will increase meaning that there is the potential for there to be a lack of sufficient local workers in the future. The jobs base is also currently dependent on small number of large employers, although there is a comparatively high business start-up rate, particularly amongst lifestyle entrepreneurs. Therefore, promoting the towns and rural areas of Tees Valley to change external perceptions of the area will assist in attracting and retaining a larger workforce.

New transport investment will make it easier for visitors, leisure and business to come to the Tees Valley. Improvements to the Tees Valley rail network will support the economic prosperity of the Tees Valley through enhanced connectivity, but there are existing constraints at both Darlington and Middlesbrough stations that threaten

the planned improvements. Overcoming these constraints will be vital to support the economic growth ambitions.

2.1.2 Darlington Area Profile

The Borough's current population is about 106,566, made up of 48,000 households. It has an ageing population, caused by declining birth rate over recent decades and by out-migration of young, well-educated, adults seeking better employment opportunities elsewhere. Nearly 20% of the population is of retirement age or older.

There are also marked contrasts in the life chances and quality of life of people in the Borough, according to where they live. 13% of the Borough's residents live in areas that are amongst the 10% most deprived in the country, whilst about 9% live in areas defined as amongst the least deprived 10% nationally. There is a 12.4 year difference in life expectancy between the best and worst areas for men, and unemployment in November 2018 varies from 15.2% for part of the Northgate ward to 0.6% in part of the rural Sadberge and Middleton St George ward.

The Borough's economy has performed strongly over recent years shifting from its past reliance on manufacturing to one with a wider, more resilient base. Health and social care and wholesale and retail are the most significant employers, whilst a relatively high proportion of the local workforce (29%) are in professional, senior or managerial roles, or skilled jobs (9.4%). The Borough has a projected increasing potential workforce, with relatively high skills and higher education achievements, and has economic activity and overall employment rates consistently above city regional and regional levels.

Darlington's contribution to GVA grew by 13.8% between 2013 and 2017, above the national average of 11.8%. Darlington's GVA per head is now £24,908, increasing by £3,462 since 2008, and significantly above the regional GVA per head figure of £20,121. Darlington's GVA per hour worked stood at 90.8% of the UK rate in 2017, better than the Tees Valley average of at 66.7% and the North East average of 73.4%.

Recent trends then show an improving picture regarding the skills and productivity of Darlington's residents, with an increase in total GVA per annum, a rise in the employment rate and an upsurge in the number of residents educated to degree level or equivalent (NVQ4 or above). Darlington has the second highest proportion of residents with an NVQ4 of the Tees Valley Local Authorities. This showcases the success of the Borough's focus on developing higher level skills required for economic and business success.

The employment rate in the Borough, at 74.4%, is now higher than the pre-recession rate of 72.1% but slightly lower than the national employment rate of 75.1%. The

unemployment rate in 2018 was 4.8% compared to 7.9% figure of 2014, below the regional average rate of 5.2% but above the current national rate of 4.2%.

The number of VAT and/or PAYE registered enterprises increased by 575 between 2010 and 2018. 87.2% of enterprises in Darlington are categorised as micro (0 – 9 employees), 10% are classified as small (10 – 59 employees), 1.9% are classified as medium sized (50 – 259 employees) and 0.8% are classified as large (250+ employees). These data do not include sole traders and other small companies that are not VAT and/or PAYE registered.

To maintain the growth of the Darlington economy, there is a need to attract and retain the right calibre of people and organisations to the Borough by providing business infrastructure and quality of life that is second to none. Therefore, the Borough needs to widen its economic base and deliver housing growth and improvement, if it is to continue to increase the number and quality of jobs available for its residents across all sectors, increase wage levels and meet the housing aspirations and needs of the population.

The recently accepted proposals for the Skerningham Community Village and Burtree Garden Village will see around 6,500 new homes provided over the next 20–25 years, alongside recent employment growth at Symmetry Park and the expansion of the Newton Aycliffe Business Park expansion.

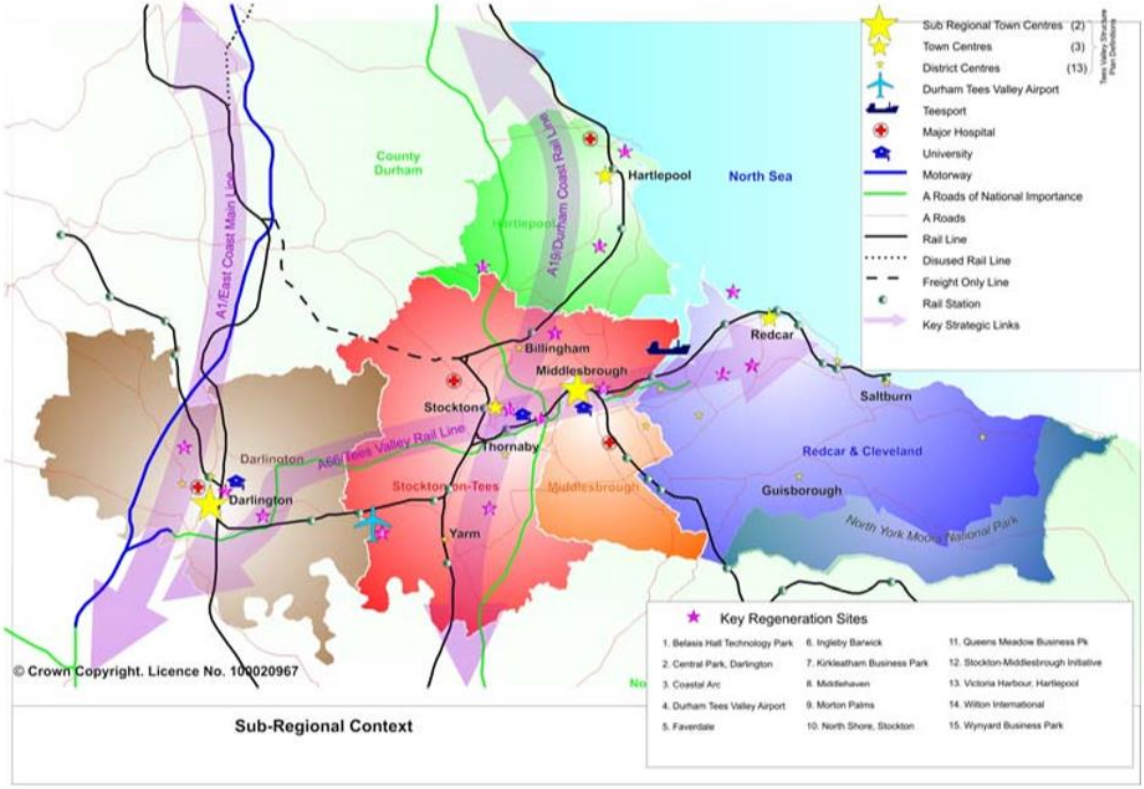
Darlington is in a unique position and should exploit the economic benefit of its strategic location in relation to national and international networks for the benefit of the wider Tees Valley area. However, this will mean improving the connections of the town, particularly to the east where there is a higher proportion of deprived wards and supporting its role as a gateway to the wider city region, as well as to the north.

2.2 Step 2: Identifying Transport Barriers

2.2.1 Tees Valley Transport Issues

The Tees Valley is recognised as an economic functioning geography with several economic foci, rather than one single dominant commercial centre. This polycentric character results in complex patterns of movement between the various centres which, combined with the significance of intra-regional commuting indicates the importance of good, reliable interconnectivity for the economy. The polycentric nature of the labour markets is shown in Figure 2.8.

Figure 2.8: Tees Valley Labour Markets

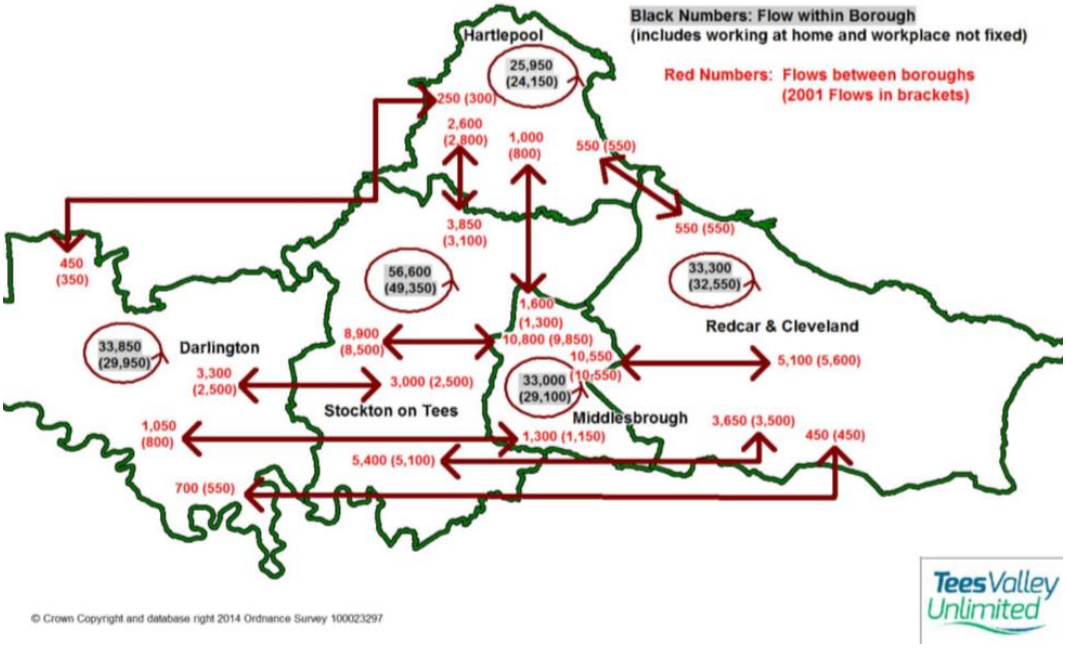


87% of residents work within the Tees Valley, with relatively few commuters crossing the Tees Valley boundary (around 248,000 people live and work in Tees Valley with 38,000 Tees Valley residents working outside of the area and 35,000 Tees Valley workers resident in other areas).

Whilst most people work within their district of residence, there are substantial proportions travelling between districts within Tees Valley, as illustrated in Figure 2.9.

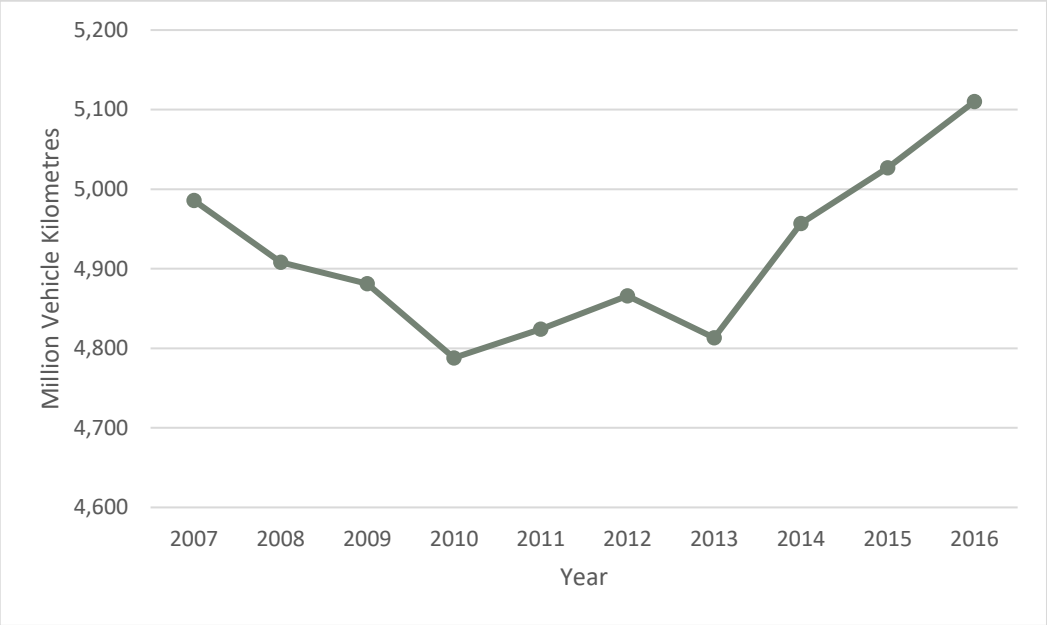
In terms of flows to Tees Valley's neighbouring areas, there is a small net out-flow of around 700 commuters to North Yorkshire (comprised of 9,700 out-flow and 8,900 in-flow) with a similarly small net out-flow to Tyne & Wear of 1,300 (5,800 out-flow and 4,600 in-flow). The largest commuter flows are with County Durham with a net in-flow of close to 6,900 (comprised of 10,600 out-flow and 17,500 in-flow).

Figure 2.9: 2011 Census Travel to Work Data



With approximately a quarter of the population of the North East and a higher population density, the Tees Valley demonstrates a greater reliance on motor vehicle transport than the wider region. Despite recent and ongoing improvements to sustainable modes, for example through the Tees Valley Bus Network Improvements scheme, motor vehicle traffic has continued to grow in recent years and commuting by road, by any form of motorised vehicular transport, continues to dominate travel patterns within the City Region. Figure 2.10 illustrates the trend in motor vehicle traffic, which has grown again in recent years since a dip as a result of the economic downturn in 2008.

Figure 2.10: Tees Valley Motor Vehicle Traffic Trends



Having said this, growth in rail usage has also been strong over a similar period, as shown in Figure 2.11. Over a longer period, between 2000 and 2018, patronage at all Tees Valley stations has grown by 75%, and this growth has largely been maintained through recent challenging economic conditions (for example, there was a 6.3% increase between 2012/13 and 2017/18).

Figure 2.11: Tees Valley Rail Passenger Trends

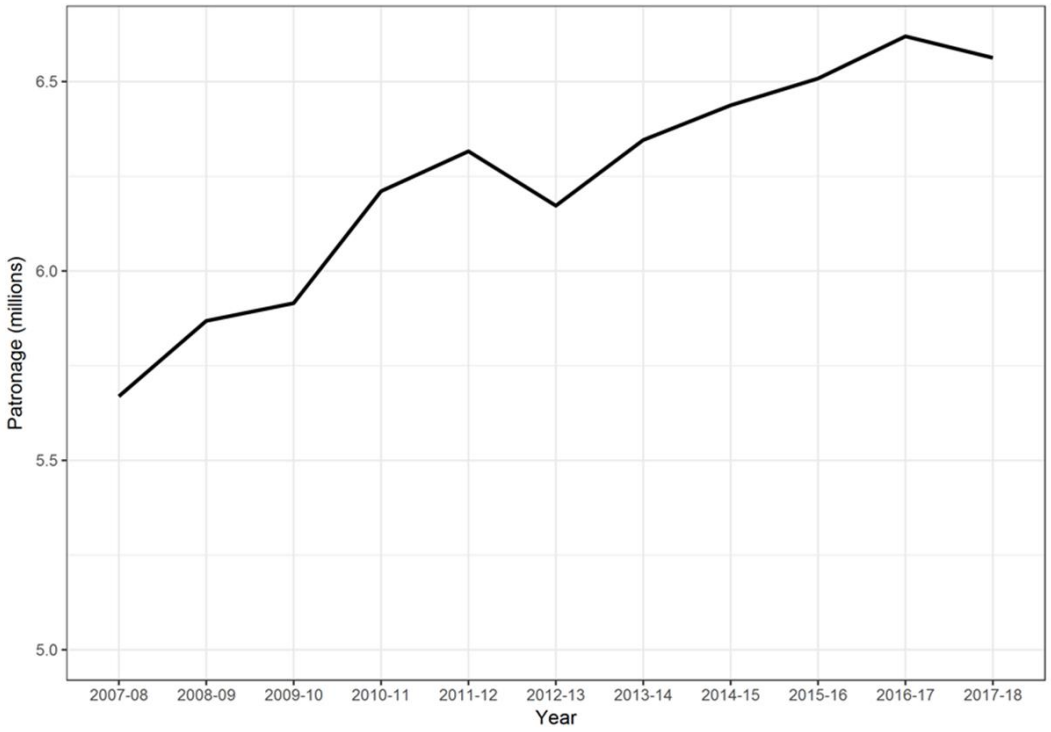


Table 2.1 shows the change in usage at the Tees Valley's two principal rail gateways over the last six years for which data are available, highlighting the growth at Darlington in particular.

Table 2.1: Passenger Usage Trends at Tees Valley Rail Gateways

Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Darlington	2,199,524	2,243,233	2,250,978	2,276,238	2,329,991	2,394,446
Middlesbrough	1,373,524	1,348,960	1,333,222	1,357,420	1,314,379	1,289,866

As the different economic and cultural assets of the Tees Valley become more joined-up, so the rail network will become more important as a public transport alternative.

Continued growth in road traffic will have significant negative consequences in terms of congestion and the environment, both of which will stifle future growth. Ensuring that the Tees Valley has a public transport network that has the requisite capacity and resilience to cater for future demands, which result in a reduction in the historic growth of motor vehicle traffic, is essential.

Freight movements by rail have continued to increase as epitomised by the growth in container traffic into and out of the ports of Tees and Hartlepool, which has

increased by an average of 7% per annum over the last five years. Approvals and funding are already in place for the Northern Gateway Container Terminal expansion which will significantly add to this by more than doubling the container capacity to 1.1 million TEU and creating up to 4,000 direct and indirect jobs. The future development of the South Tees Development Corporation (STDC) site could also open up further opportunities for freight growth in this area.

Again, the highway network is the more natural choice for freight operators, as road-based connections are generally lower cost at source, although the overall cost to society in terms of safety and the environment in particular, is much greater. Freight is, and will remain, a vital component of the Tees Valley economy – the aim will be to ensure that rail-based freight operations become the natural choice to support future growth.

2.2.2 Rail Network Issues

The current Tees Valley rail network shown in Figure 2.12.

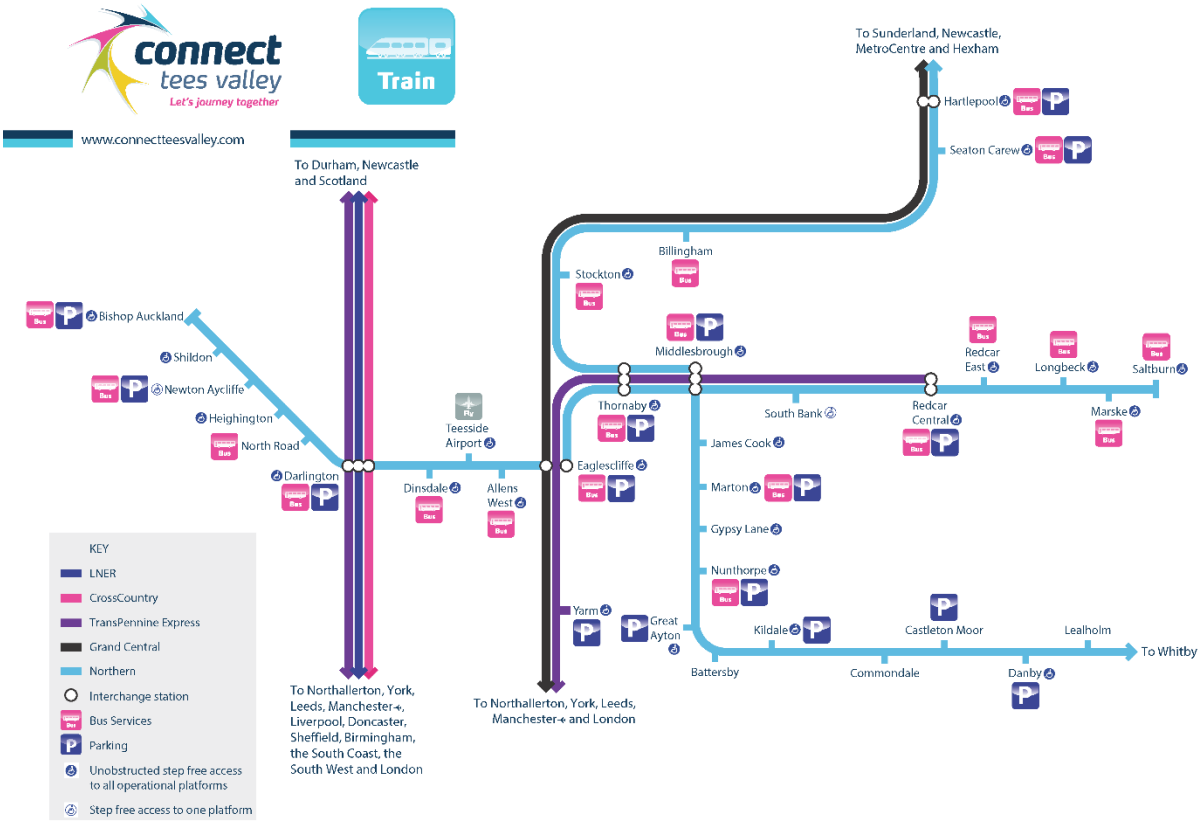
Whilst the network is fairly extensive, it is still based, to a large extent, on historic patterns of development and travel demand and it does not necessarily fully meet the future needs of the City Region.

Passenger service levels, quality and connections are also not up to a sufficient standard to fully support the ambitious growth plans. Most existing local timetables were designed many years ago and connections between services are often far from ideal, services do not always start early or run late enough, Sunday services are often poor and there are even gaps in service at the busiest weekday peak times. Connections are also poor, often with significant waiting times or missed connections and do not offer an attractive alternative to the car.

Rail links to London and Scotland via the services on the ECML, principally those operated by London North Eastern Railway (LNER) are critical for business and leisure travel. This is highlighted by recent research which showed that existing ECML services at Darlington benefit the Tees Valley economy by £400 million. Hartlepool and Eaglescliffe also continue to benefit from the direct links to London provided by Grand Central. It is important that these links are retained and enhanced to offer optimum provision for Tees Valley passengers and to support the economy.

Connectivity to the Midlands and beyond to the south west, as well as to Yorkshire, is also important and is currently provided by Cross Country services. There are 742,000 Cross Country journeys per year from Darlington, which equates to almost one third of all rail demand at the station.

Figure 2.12: Tees Valley Rail Network



East-west connectivity across the North is provided by the TransPennine Express franchise from Darlington and Middlesbrough (plus Thornaby and Yarm) as well as, since December 2019, Redcar Central, connecting to York, Leeds, Manchester and Manchester Airport. The economic linkages between the Tees Valley and the Leeds and Manchester city regions are important to the economic vitality of the area. In particular, there are strong economic, social and cultural links between Tees Valley and Leeds. The service to Manchester Airport is critical in that it is currently the only direct link between the City Region and the North's major international airport for businesses that require a high level of international connectivity.

Local rail connectivity within the Tees Valley, for both passenger and freight services, is also vital to the economic growth plans to ensure that key centres of population and economic activity are well connected together as well as to the national rail network. Whilst there is relatively good east-west local rail connectivity, it is not as good north-south or between, say, Darlington and Hartlepool, which have no direct rail connection during weekdays. The Northern franchise provides the majority of local rail services which operate on the Tees Valley rail network.

Recent Average Public Performance Measure (PPM) and Right-Time figures show that the recent performance of the local Northern services in the Tees Valley and wider North East was generally been better than for other operators and that in the North East, performance was better than the Northern Rail average.

Whilst this is clearly a positive for Tees Valley passengers, there was an emerging picture of falling performance across all operators between 2016/17 and 2017/18. The figures for the longer distance operators, including TransPennine Express, were similar in 2016/17 and showed the same sort of decline in 2017/18. More recent performance figures are even lower for both franchises as a result of the well documented problems related to the introduction of the May 2018 timetable changes.

However, the pattern of decline in performance before May 2018 is concerning and is likely, at least in part, to be related to increasing issues of lack of capacity and resilience across the rail network that will be discussed in more detail below.

The Tees Valley is still a major hub for the movement of rail freight with the freight-only Stillington Line, which branches off in a north westerly direction north of Stockton, providing an important additional link to the ECML south of Durham. There is also a number of rail-connected freight facilities operating at Middlesbrough, the ports of Tees and Hartlepool, Redcar, Lackenby Wilton, Boulby Mine, Skinningrove, Port Clarence and Hartlepool. These are supported by large marshalling yards at Thornaby (Tees Yard) and Middlesbrough.

As with the historic development of the passenger rail network, local rail freight infrastructure has largely developed on the basis of major flows of dry and liquid bulks to and from private sidings or port facilities, relating to the City Region's position as a major centre for petrochemicals, steel-making and power generation. The future development of the STDC site is likely to add significantly to the growth potential for freight in the Tees Valley, as well as increasing passenger demand.

In short, the capacity and capability of the passenger and freight rail networks that serve the Tees Valley is now becoming a serious concern in terms of the impact this will have on future economic growth.

The ECML north of York, and in particular north of Northallerton where it becomes a two track only railway, is now at or very close to capacity with train operators now struggling to deliver franchise commitments as a direct result. For example, from May 2018 not all of the new TransPennine Express services between Newcastle and Manchester Airport were able to make calls at Darlington due to lack of capacity on the ECML. These short term capacity issues only get worse in the future.

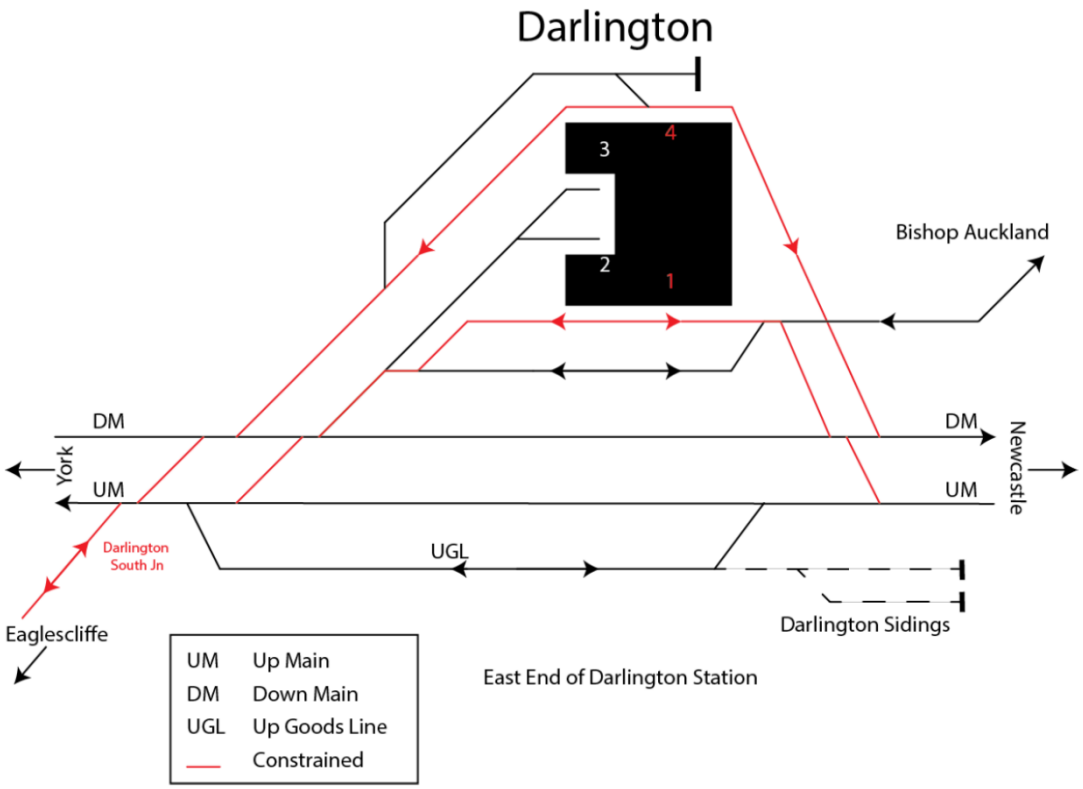
The existing layout at Darlington station exacerbates problems with capacity and resilience. All local rail services between Darlington/Bishop Auckland and Saltburn are required to cross the ECML at Darlington South junction. The 'free' operational

capacity of this junction is low, meaning that any changes to service levels would have to be made using trade-offs between trains in different service sectors, and/or by adjusting stopping patterns and the destinations served.

Network Rail's recent capacity analysis, published in June 2019 and included at Appendix B, indicated that neither Darlington South junction, nor the two through platforms at the station have the capability to accommodate the Indicative Train Service Specification (ITSS) that is being developed by the industry for the ECML. This is shown in Figures 2.13 and 2.14, the former of which also indicates imminent capacity issues at Middlesbrough station and on the junctions to the north and south of Hartlepool station with a planned increase in services on the Durham Coast Line. TVCA is developing separate proposals to address these identified capacity issues.

Figure 2.13: Locations of Forecast Capacity Constraints with Baseline ECML ITSS

Figure 2.14: Constrained Sections around Darlington Station with Baseline ECML ITSS



The capacity analysis concludes that *"a potential solution to resolve the over capacity utilisation of Darlington South Jn is to double track Darlington South Jn and install another platform east of Darlington, such that the Saltburn – Darlington and Sunderland – Darlington services do not interact with the ECML"*.

The location of the station itself, to the west of the ECML through lines, means that there are relatively low speed entries to the station, particularly in the northbound direction. Whilst not necessarily a significant constraint to approach speeds given their proximity to the station, such low speed crossovers can have an adverse impact on overall journey time and reliability and may be an increasing issue as more high speed services call at Darlington in the future.

Network Rail's market analysis forecasts that passenger demand on long distance services from London on the York - Newcastle section of the ECML will increase from 2017 levels by 27% by 2023 and 107% by 2043. Similarly, strong growth is forecast to the 2040s for cross-country travel (81%), trans-Pennine (72%), and suburban passenger journeys into Newcastle (72%). These growth rates were forecast excluding any impact of HS2 or NPR.

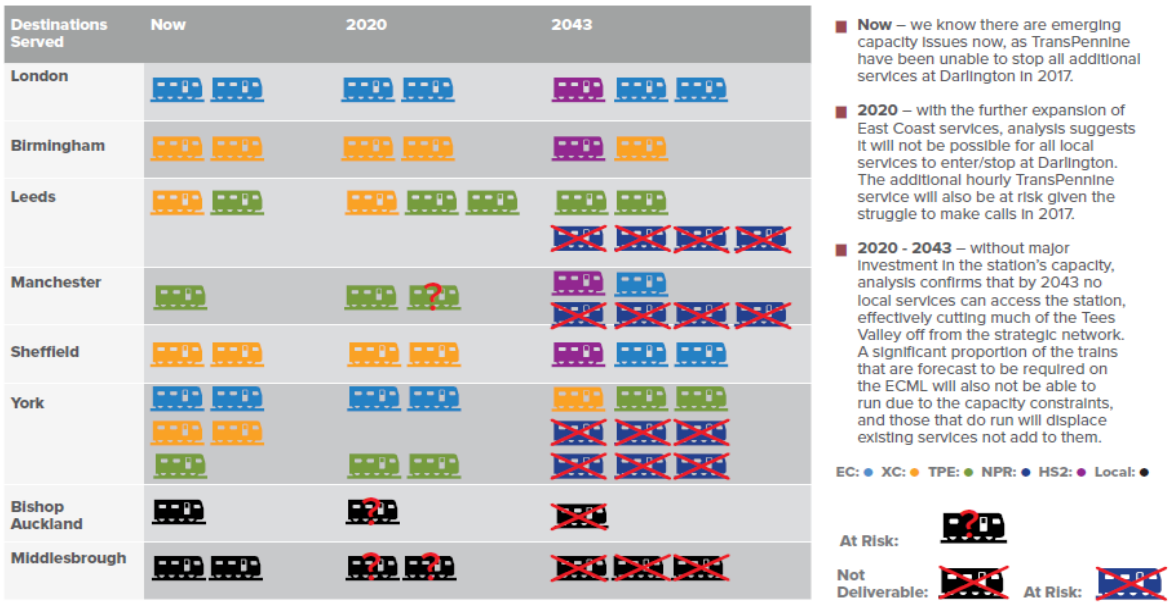
To deliver the sort of step change in journey opportunities needed to support economic growth on this section of the ECML, Network Rail's ECML Route Study

utilises an ITSS that increases passenger service levels from the current 5-6 per hour between York and Newcastle, to at least 9 per hour. This accounts for the introduction of both HS2 and NPR. Freight levels are assumed as constant – on average, 2 per hour as now – this reflects a picture of reduced demand in some freight sectors being balanced by increased demand in others.

The Route Study further identifies a package of investment that would be necessary to enable nine services per hour on the ECML between York and Newcastle. This includes the requirement to improve capacity and resilience at Darlington Station.

Without intervention, the full future ITSS proposed cannot be delivered – this includes HS2 and NPR. Figure 2.15 illustrates the services that it is considered would not be possible and those that could be at risk without any intervention at Darlington. If this were to materialise, it would significantly hamper the Tees Valley's growth aspirations and the aim of reducing the growth in motor vehicle usage as trip demands increase.

Figure 2.15: Risks to Future Service Specifications



Whilst the ECML Route Study rightly concentrates on the main north-south connection, the local rail network is also constrained by the existing conditions at Darlington. This means that without interventions to free up known capacity pinch-points, in particular at Darlington and Middlesbrough stations, and at other likely pinch-points such as Hartlepool, no further train services or station calls are possible with the current infrastructure.

This is clearly not sustainable given the levels of growth that are forecast, the increased service levels that are already committed and the aspirations to open up new stations around growth areas such as Morton Palms, Teesside International Airport and the STDC site.

Other local rail connectivity issues include:

- Most existing local timetables were designed many years ago and are not now reflective of the travel demands of the current Tees Valley economy between the key centres of activity;

- The Tees Valley's existing rail stations are not always in the ideal locations to meet the needs of new markets and to encourage greater accessibility to the local rail network;

- Connections between services (local, regional and national) are often far from ideal, services do not always start early or run late enough, Sunday services are often poor and there are even gaps in service at the busiest weekday peak times;

- Rail journey times on local lines are also uncompetitive, for example, it can take 40-60 minutes to travel by train from Darlington to Middlesbrough and Stockton (as adjacent key centres), compared to a journey time of 19-23 minutes for car travel, with a journey to Hartlepool often taking 60 minutes or more compared to a car journey of 40 minutes;

- Beyond the two main capacity constraints at Darlington and Middlesbrough stations, others are emerging such as lack of platform capacity at Hartlepool and Redcar Central for additional services and the need for further expansion and additional car parking at Eaglescliffe – the provision of adequate capacity across the whole Tees Valley rail network is vital to support passenger and freight growth;

- Rail fares are viewed by many passengers as complex with a baffling array of ticket options on offer which often makes obtaining the best deal very difficult;

- There is a lack of integration with other modes of public transport with rail and bus timetables and ticketing often lacking the required coordination; and

- Whilst the provision of cycling parking at stations is improving, more can still be done and the limits on the carriage of cycles on trains remains confusing and acts as a barrier to use.

Darlington is not just the ECML station for the Tees Valley but also significant parts of North Yorkshire and South Durham. If the aim is for mode shift onto rail and to

maximise the benefits of HS2 and NPR, then capacity needs to be unlocked and improvements made at Darlington Station.

In addition to this, key freight links on the rail network are currently unable to cater fully for the largest growth market in the Tees Valley which is high cube containers to/from the ports of Tees and Hartlepool. Although a terminal exists at Teesport, which facilitates the transfer of containers onto rail, without the rail network in the Tees Valley having the sufficient gauge clearance to transport the largest containers, there will be a continued reliance on transporting these by road.

At this time, any high cube containers from the South Tees area wishing to go south on the ECML are required to go into the freight sidings to the east of Darlington and reverse out to head south given the lack of W10 or W12 gauge clearance on the route towards Northallerton via Yarm.

Economic specialisation within the Tees Valley as part of the vision for regeneration is likely to reinforce the Tees Valley's polycentric form, hence transport solutions that support this economic vision to provide better quality links between centres will be vital. Furthermore, freight movements are key to the Tees Valley economy, both through its manufacturing industries and as movements through its several ports, including the Teesport.

Therefore, future economic growth requires that the transport network is able to accommodate increased freight movements. In particular, the option to offer a realistic alternative to use the rail network for freight movements as opposed to a continued heavy reliance on the road network, will be crucial. In general, improved connections beyond the City Region to the rest of the country, and to London in particular, are also highlighted as being desirable.

2.2.3 Darlington Transport Issues

Darlington's economic strategy is underpinned by its accessibility to national, regional and local transport networks and its intrinsic quality of life both within the Borough and places around it. The Borough already has a significant record of achievement across the Tees Valley in delivering programmes of activity that promote less environmentally damaging and lower carbon forms of transport, including Sustainable Travel and Cycling Demonstration Town projects in Darlington.

Its location on the ECML, adjacent to both the A1(M) and A66(T) and its proximity to Teesside International Airport provide easy access to the North East as well as to major conurbations including Leeds, Manchester and London, and have helped to attract investment into the Borough.

Whilst there is a significant potential for Darlington Station to become a growth hub by taking advantage of its strategic position on the ECML, existing capacity constraints cause limitations on its ability to realise its full potential. The configuration of the rail infrastructure limits the ability to increase the station's local, regional and national connections.

Darlington Station is not currently fulfilling its potential due to capacity issues and a lack of appropriate facilities. This adversely impacts on both mainline services and those local services which either terminate or cross the mainline at Darlington.

The station itself is not necessarily a suitable gateway to the City Region, with a lack of retail facilities compared to other similar stations across the network and accessibility and connections issues that do not necessarily provide safe, high quality links between the station and the surrounding area, as shown in the photographs below.

The role that rail stations can play in the promotion of an area given that it often provides the first impression, is becoming more understood. In addition to the capacity constraints at Darlington, the passenger experience and the facilities offered should be representative of the economic ambitions of the Borough and the wider Tees Valley City Region. This is particularly important given the enhanced role that Darlington Station will play in welcoming visitors to the area as part of the 2025 celebrations.

2.3 Step 3: Exploring Options and Strategic Alternatives

2.3.1 Objectives

Before exploring the options for tackling the transport issues outlined above, a series of objectives were developed, mindful of national and regional rail policy, the transport issues described previously and stakeholder opinions.

Economy:

- Support the economic growth/regeneration objectives of the Northern Powerhouse and the Tees Valley City Region;
- Improve east-west passenger and freight connectivity to the City Region Strategic Centres, Enterprise Zone sites and expanding port facilities along the River Tees, including Teesport;
- Support sustainable local development, with an increase in land values around the station;

National Rail:

- Keep goods and people moving smoothly and safely;
- Grow and upgrade the rail network to better serve passengers and freight;
- Provide better value for money from the rail network;

Rail Network Performance:

- Ensure that the East Coast, TransPennine, Durham Coast and Tees Valley rail networks can cater for expected future growth in both passenger and freight demand across the North;
- Ensure that Tees Valley's principal rail gateways are ready for major projects such as HS2 and NPR;

- Deliver high quality, integrated local services (with improved interchange facilities to facilitate more rail journeys) in line with the vision established by TfN's Long Term Rail Strategy;

Quality of Life:

- Provide an improved gateway to Darlington and the Tees Valley which will enhance perceptions of the Borough and the wider area;

- Provide a station and surrounding area that are accessible and safe for everyone, and protect and enhance its heritage value and appreciation;

- Improve access to employment opportunities through low carbon transport choices.

These objectives were then utilised in the option development and selection process.

2.3.2 Options

A Masterplan for Darlington Station was completed in 2016 and the work followed a logical sequence which identified potential constraints and examined a number of options. The principal aim of the Masterplan in terms of rail performance was to develop a holistic solution to the identified national, regional and local passenger and freight issues described previously.

The following pieces of work were undertaken to inform and understand the constraints:

- Opportunities and Constraints analysis, looking at the regional, town and local perspectives to inform the future work;

- Initial development scenarios;

- Masterplan sketch studies;

- Transport Connectivity Study to inform the integration with all modes of transport;

- Train Planning Capacity and Demand Forecasting;

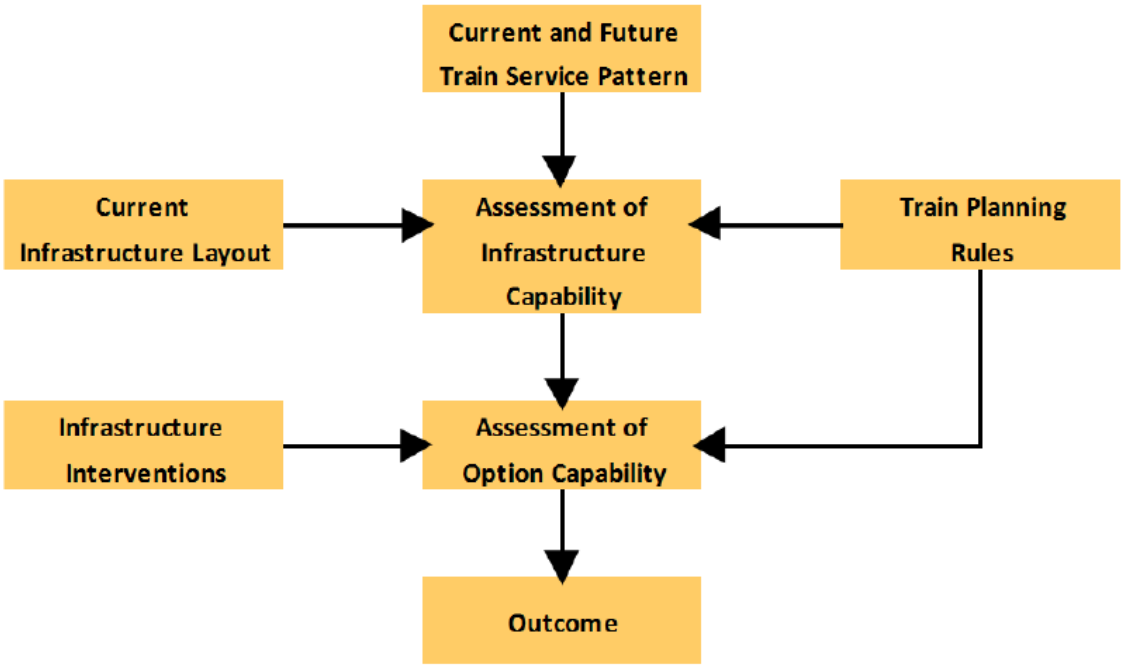
- Station Options Assessments; and

- Heritage Statement of Significance, given the current Grade II* Listed status.

These pieces of work were all informed by workshops with stakeholders at the appropriate time.

The option development process is summarised in Figure 2.16, and the principal output was a Train Planning Capacity Technical Note, included here at Appendix C, that considered the infrastructure interventions against future train service patterns.

Figure 2.16: Option Development and Assessment Process



The summary of the option assessment, in terms of the principal station layout options considered that provide additional platforms on the east side of the station, is set out in Table 2.2.

Consideration was also given to even more platforms across the station to those outlined in Table 2.2. Whilst not necessarily required, it would be desirable for any option considered to have the ability to provide an additional platform for local services should demand increase significantly beyond that forecast.

Table 2.2: Darlington Station Option Assessment Results

Option	Impact on Existing National Rail Services	Capacity to Support Future National Rail Services (HS2/NPR)	Impact on Local Services
Current Layout (four platforms)	None	Not Possible	None Increased Frequencies Not Possible
Local Platforms Only (six platforms)	Enhanced Resilience	Some Future Service Accommodated	Enhanced Resilience Increased Frequencies Possible
Local and National Platforms (seven platforms)	Enhanced Resilience Reduced Journey Times	Future Services Accommodated	Enhanced Resilience Increased Frequencies Possible

The Network Rail capacity analysis suggested that a doubling of Darlington South junction would be a suitable solution to the identified constraints, although it is not necessarily dependant on, or fundamental to, the provision of new platforms to the east of the station.

Further to this work, a technical options workshop was held in August 2019 with representatives from Network Rail, Northern Rail, TVCA and DBC. Representatives of LNER were invited but were unable to attend and so were provided with a separate briefing on the outcomes to ensure their awareness of the work. The aim of the workshop was to agree high level options for the proposed scheme and record the options considered and the reasoning behind decisions taken, in line with GRIP2.

The workshop covered the three essential elements of the scheme in turn:

- Operational layout;
- Existing station connections; and
- New station, car park and public realm,

The workshop considered the track layout connecting the existing Tees Valley rail line to the new platforms, the platform layout and provision (aimed primarily at not requiring any of the existing track to the east of the station to be altered), the means of connecting into the existing station and the types of passenger facilities that should be provided at each station entrance, based on an assessment of the principal function of each entrance and its relationship to the surrounding area. It involved considering a number of options for each as a development of the design work done

for the Masterplan as well as the updated design prepared for the Strategic Outline Business Case (SOBC) in 2019.

The main output from the workshop was a technical note included at Appendix D.

The issue of severance of east-west movements on the Bishop Auckland Line through to the Tees Valley Line across the ECML was raised by some stakeholders in the option assessment process.

As indicated in the Train Planning Capacity Technical Note, some high level feasibility work was undertaken on grade-separated and underpass solutions but physical constraints and potential cost resulted in these options being discarded at an early stage. In the technical options workshop, this issue was also raised, with the conclusion that any option taken forward should not definitely require the severance of the existing service in the future.

The DfT also requested that the option assessment process consider how the requirements for NPR (as currently known) could be accommodated within the emerging options for Darlington Station and to ensure that there would be no abortive work to implement a further phase of the scheme to accomodate NPR. This work has been completed to the satisfaction of TfN, as evidence by the letter included at Appendix E.

Non-rail alternative options to provide enhanced local connectivity (with national and regional rail services taking precedence in terms of the available capacity at the station in the future) were discounted at an early stage in the option assessment process. Bus-based alternatives would have a significant increase in travel times, up to 50% higher, compared to existing rail services between Darlington and, say, Middlesbrough, causing a significant disbenefit to passengers if such a solution were pursued.

2.4 Step 4: Exploring Impacts of Interventions

2.4.1 Preferred Option

The preferred option for the Darlington Station improvements includes the following components:

- Two new platforms on the east side to accommodate existing and future Tees Valley local services;
- The track between these platforms and Darlington South Junction designed to ensure the local services can operate independently from the ECML, removing current capacity and reliability issues at Darlington South Junction;

- Another new platform adjacent to the Up Goods Line, to be used by southbound intercity, HS2 and NPR services calling at Darlington – this would remove need to cross the ECML Down Main Line (north) at Darlington North junction, allowing all Down (northbound) intercity services to use the current platform 1, giving a much faster, unconflicted approach and departure in both directions, saving valuable time on the ECML;

- A new station building, with multi-modal connections, to service the new platforms;

- Bishop Auckland services to use the current platform 4, operating independently (conflict free) in the future, if desired;

- A new accessible footbridge linking the new platforms and station building with the remainder of the existing station;

- A new transport interchange and MSCP adjacent to the new station building, serving rail users and potentially, adjacent developments;

- Access improvements for pedestrians and cyclists from Parkgate; and

- Enhancement to the portico and transport interchange facilities on the western side of the station.

Whilst more detailed work on some of these components of the preferred option will be undertaken in the next phase of scheme development, the site plan included at Appendix F show the essence of the preferred option at this time. The implementation of the preferred option could be phased over time, particularly in line with the need for wider improvements on the ECML, hence the timing of delivering the third element above, as well as any further interventions for NPR, is somewhat flexible.

2.4.2 Measures for Success

Measures for success are the attributes essential for successful delivery of the scheme. They include not only measurable impacts on travel conditions but also consider the strategic fit, value for money and affordability, achievability and commercial aspects of the project.

Success will be through the delivery of a scheme (potentially in phases) that fully meets the objectives set, which means:

- A fit for purpose gateway station at Darlington providing a holistic solution for the future demands of mainline rail services, including HS2 and NPR – this will ensure

that the Tees Valley's external public transport connectivity, thus supporting TVCA's economic prosperity;

- An enhanced local rail network for the Tees Valley that has been made possible by the infrastructure improvements and removal of constraints at Darlington – this will ensure much improved rail links within the Tees Valley between TVCA's key economic centres and much improved connectivity with mainline services at Darlington;

- Much improved facilities for passengers within Darlington Station, improved accessibility both within and to/from the station, improved car parking and better interchange facilities and integration with other modes of transport;

- A rail station that links better with the town centre and the adjacent Central Park Enterprise Zone site; and

- Completion of at least the first phase of the project before 2025 to meet the 200th anniversary of the Darlington to Stockton railway, in line with the cultural and rail heritage aspirations of the City Region.

Wider impacts of the scheme include:

- Support for Tees Valley's economic growth ambitions as set out in the SEP;

- Delivering additional capacity and resilience on the ECML; and

- A role in supporting the wider transport and growth agenda for the North as set out in TfN's Strategic Transport Plan.

These success factors are closely aligned to the outline benefits realisation and monitoring and evaluation plans, both included in the Management Case.

2.5 Step 5: Aligning with Wider Local Plans and Objectives

2.5.1 Tees Valley Local Plans

The Local Authorities within the Tees Valley are at various stages of Local Plan preparation. Local Plans have recently been adopted for Redcar and Cleveland (2018), Hartlepool (2018) and Stockton-on-Tees (2019) Borough Councils. Local Plans for Darlington Borough and Middlesbrough Councils are at draft stage. The Local Plans establish a framework for the sustainable economic growth and development over their respective plan periods in part through the identification of site for housing and employment growth to meet identified needs. In terms of housing delivery, the Tees

Valley Local Plans aim to provide beyond the 22,000 homes in the period from 2016 to 2026 as set out in the SEP.

The rail network is vitally important in connecting the key centres of the commuting population within the Tees Valley and supporting the wider economic growth ambitions. Housing and employment allocations within adopted and emerging Local Plans will increase the number of trips within the City Region and re-emphasise the importance of the rail network in supporting economic growth within the Tees Valley.

2.5.2 Darlington Local Plan 2016-2036

DBC is currently developing a new Local Plan, the process of which includes identifying strategic development locations as part of their growth agenda to deliver up to 10,000 dwellings and 6,000 new jobs over the Plan period.

In preparing the new Local Plan, a Strategic Framework has been developed that sets out the Vision, Aims and Objectives for planning new development in Darlington. The Framework highlights the importance of capitalising on Darlington's excellent existing transport connections to the national strategic network and the Local Plan should seek improvements to regional connectivity across the Borough.

DBC undertook a partial update of the Borough's 2015 Strategic Housing Market Assessment (SHMA) in 2017 – this outlines a need for approximately 10,000 new homes over the new Local Plan period.

Final decisions on individual site allocations, phasing and delivery, are now being considered and will reflect an updated Objectively Assessed Needs Study (OAN), and the revised Housing and Employment Land Availability Assessment (HELAA) and evidence of viability. This analysis to date shows that the demand for housing in Darlington is growing and future economic growth is likely to increase demand further. In order to meet the needs of Darlington in the future, sufficient housing of a suitable mix of sizes and styles will be required.

An Employment Land Review has also been undertaken to get a full picture of demand for land/floorspace for economic development in Darlington, including an analysis of key sectors for growth.

In June 2018, a Draft Local Plan was published which provided the opportunity for stakeholders and local residents to comment on the policy framework to guide development over the next 20 years, together with the suggested site allocations, associated detailed assessments, and other policies which could accommodate the growth necessary to meet the Objectively Assessed Needs of the Borough. The plan was also supported by a Sustainability Appraisal (incorporating a Strategic Environmental Assessment).

2.5.3 Darlington Economic Strategy

DBC also prepared an Economic Strategy for the period 2012 to 2026, developed by the Darlington Partnership and DBC through consultation with local employers, business support organisations, trade bodies, education providers, investors and local entrepreneurs. The strategy was reviewed with businesses and stakeholders through a Business Summit held in July 2016. The feedback from businesses and stakeholders along with the emerging wider Tees Valley priorities has been reflected in recent action plans to ensure this document remains relevant.

The strategy indicates that Darlington is focusing on the key potential growth sectors of Biologics, Subsea, Advanced Engineering and Manufacturing, Logistics and Public Sector/Service Sector, on increasing workforce skills, and supporting start-up businesses and growth within SMEs. Four key themes are being pursued as follows:

- Place – promoting Darlington as an outstanding business destination in terms of its location, quality of life, skilled workforce and business environment;
- People – support education, skills and employability initiatives that match the needs of the local economy;
- Infrastructure – taking forward the economic case and lobbying for an integrated transport network including improvements in road, rail and air connectivity;
- Business Growth – targeting Darlington's high growth SMEs, whilst also building on existing sector strengths in advanced manufacturing/engineering, logistics/distribution and the digital creative sectors, whilst supporting emerging growth sectors such as sub-sea and biologics.

The Economic Strategy identifies one of the barriers to future growth is congestion within and across the Borough, particularly as car use in the region is expected to increase in future years as are population numbers and housing. This confirms the need to invest in sustainable transport alternatives to address both existing and future demands.

2.5.4 Local Large Scale Developments

The Ministry of Housing, Communities and Local Government (MHCLG) announced their support for the Skerningham Community Village and Burtree Garden Village proposals in July 2019. The Skerningham development includes proposals for 4,500 new homes over the next 20–25 years with proposed accesses to the site from the A1150, and also a crossing of the ECML onto the A167.

The Burtree Garden Village in Faverdale is expected to deliver 2,000 homes over a 15 year period, together with 200,000 sq m of employment space. This site is proposed primarily to take access from the A68 to the south, but also onto Burtree Lane to the north.

Additionally, Newton Aycliffe Business Park expansion has recently obtained planning consent which will provide opportunities for 3,200 new jobs close to Junction 59 of the A1(M) at the northern end of the proposed Darlington Northern Link Road.

2.5.5 Other Rail Network Proposals

There is a number of other rail network proposals that are of relevance to this scheme. These are summarised in the following section.

HS2

HS2 will radically improve rail connectivity between the North, the Midlands and the South by providing new state-of-the-art infrastructure that will relieve existing capacity constraints on both the West Coast and East Coast mainlines. The proposed HS2 network is shown in Figure 2.17.

HS2 Phase 1 between London and Birmingham is already under construction and over 850 business in the North are already providing services to HS2 Phase 1. Current plans are that HS2 Phase 2a will extend the network to Crewe shortly after the opening of Phase 1, with trains using existing infrastructure to reach their destination. Completion of HS2 Phase 2b to Manchester and Leeds will lead to more and faster journeys between the North, the Midlands, and London.

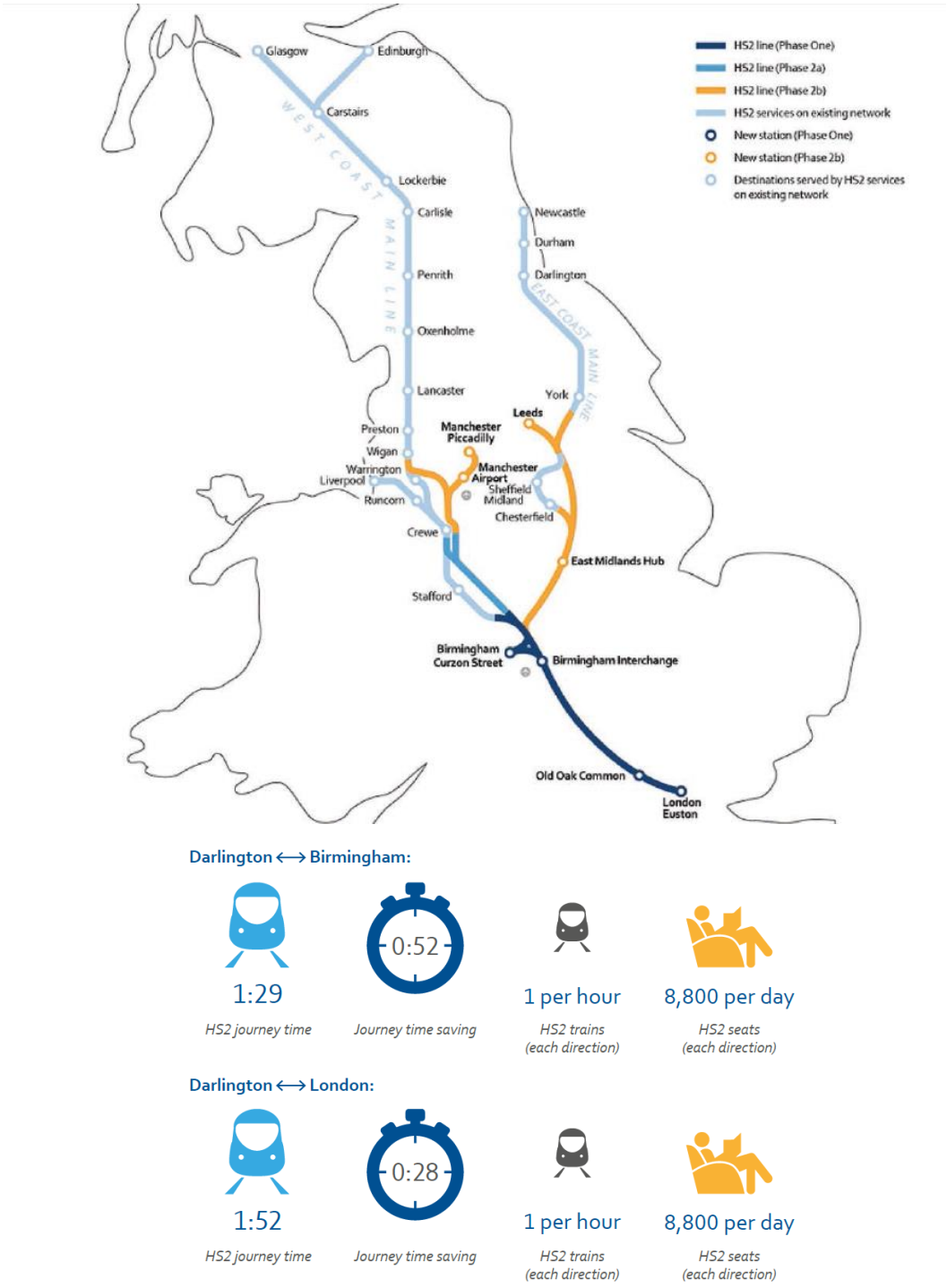
HS2 infrastructure can provide up to 18 trains per hour running in each direction to and from London when complete and has the potential for up to a further 12 trains per hour to and from Birmingham. HS2 services will be up to 400m in length, will carry over 300,000 passengers a day, releasing capacity on the existing rail network for new and improved services better serving local and regional markets, including commuting, as well as allowing more freight trains. This will help to reduce road congestion and take lorries off the road, helping to improve air quality.

When assessing transport user benefits and wider economic impacts, Phase 2a will generate approximately £700 million of wider economic impacts, with some £10 billion generated by Phase 2b. The whole HS2 programme is most effective and delivers greatest benefit when fully delivered and is estimated to generate £17.6 billion of wider economic benefits.

North of the connection between HS2 and the ECML at Church Fenton, HS2 services will run on the ECML and serve Darlington with two HS2 trains every hour (one to London and one to Birmingham) shown in the latest train service specification. This

will radically change the journey time and the number of seats available to both London and Birmingham, as shown below.

Figure 2.17: Proposed HS2 Network



HS2 is an enabler of the economic plans for the Tees Valley, and one of the drivers for the Darlington Station Masterplan was to ensure that the station is ready for the arrival of HS2 services in the 2030s.

Northern Powerhouse Rail

NPR is a transformational programme of rail investment that will build on current and planned investments to radically improve journey times and service frequencies between some of the major cities and economic areas in the North, which unlocks capacity and capability to deliver a much more effective rail network overall.

The vision for NPR was first established through the 2014 One North report which defined the journey times and frequencies for rail journeys between key cities in the North of England that would deliver the transformation in connectivity needed to attract businesses, investors and workers.

Through further infrastructure development work conducted by Network Rail and HS2 Ltd as well as economic appraisal from TfN, NPR has evolved in the light of the emerging evidence, changes to HS2 Phase 2b (which is essential to the delivery of NPR) route and the priorities of the North.

The emerging vision for the NPR network is shown in Figure 2.18 and identifies the opportunity for the network to serve significant intermediate markets falling in between major cities. This includes Warrington, Huddersfield, York, Darlington and Durham.

The development of NPR has now reached the stage where a SOBC has been produced and TfN is looking to develop a single option concept for each of the key corridors in 2020 alongside an updated SOBC. The improvements proposed at Darlington Station are an important part of facilitating the frequencies and journey times along the Leeds-Newcastle NPR corridor that have been targeted.

The letter from TfN included at Appendix E not only notes that the work done to date on the preferred option has taken full account of the requirements of NPR, but that TfN *"would like to continue working closely with TVCA to ensure that the two schemes can continue to be developed concurrently with the common aim of delivering the correct industry solution for Darlington"*.

ECML Route Study

This document is designed to offer an investment strategy for the ECML that sets out a series of investment choices, offered to a range of funders and investors, but choices that are grounded in an understanding of how the railway works now and in future – and of how the users of rail want it to support their businesses and the wider economy.

The summary of the investment choices that arose from the work are set out in a Phased Timeline of Investment, included at Appendix G, and clearly identifies the need to intervene at Darlington Station by 2023.

Figure 2.18: Emerging Vision for the NPR Network

Middlesbrough Station

A Masterplan has also been produced for Middlesbrough Station, with the intention of developing a single solution for the station that will resolve all the capacity and resilience issues identified at the Tees Valley's other principal rail gateway.

As with Darlington, the work will ensure that facilities and infrastructure at the station are adequate for such a major rail gateway and that it can adequately cater for the planned increase in the number of services and passengers using the station.

Crucially it will also ensure improved integration between rail and other modes and better links between the station and the town centre to the south and the Middlehaven Enterprise Zone to the north.

There are two distinct elements to the Middlesbrough Station project:

- The provision of additional platform capacity at the station – an Outline Business Case is currently being developed by Network Rail co-funded by DfT and TVCA to determine the optimum solution that can deliver the required capacity for all future growth in service levels including service improvements and enhancements included in both the Northern and TransPennine Express franchises, new ECML services to London and further improved local services;

- The provision of improved station facilities – this includes the remediation of the station undercroft to create new operational and business space, improved facilities for passengers in the booking hall and concourse areas improving access to/from the station including enhanced public realm on its various approaches.

The planned works at Middlesbrough are entirely complementary to the Darlington Station scheme and each requires completion of the other to unlock the full potential of the Tees Valley rail network.

Northallerton to Teesport Gauge Enhancements

A major upgrade of the rail line between Northallerton and Teesport is required so that it can be used more effectively by both freight and passenger trains. A key element of this is the provision of W12 gauge clearance of the line, as a precursor to the future electrification of the route. This will support the ongoing development of Teesport as a truly international gateway for the North of England by allowing the largest containers to be transported by rail along the most efficient route as opposed to having to reverse at Darlington as at present.

The provision of W12 clearance on this route will also help to alleviate capacity issues at Darlington by removing the need for significant freight movements to pass through the station. It is vital that gauge clearance of the freight network is delivered as part of a coherent national strategy so that effective end to end rail freight routes are provided. It is understood that gauge clearance of the route could be delivered relatively quickly as there are only a limited number of structures affected – an earlier feasibility study identified that work was required to only four structures along the route. GRIP4 work to confirm of the requirements for gauge clearance on the route via Yarm is due to start in 2020.

The other short term priority for the route is the delivery of linespeed improvements to bring journey times for passenger trains more in line with those achievable on the

ECML. It is important this is done quickly to get the maximum benefit of the new TransPennine Express rolling stock to Middlesbrough and Redcar Central and the new LNER services planned for 2021/22, along with the existing Grand Central services. This will further enhance strategic rail connectivity for the Tees Valley.

2.6 Step 6: Considering Wider Evidence and Stakeholder Views

2.6.1 Stakeholder Views

Consultation in relation to the scheme has been considered from an early stage in its development. As part of the development of the Masterplan, stakeholder workshops were undertaken so as to capture information, develop a fuller understanding of the network issues and consider the range of infrastructure proposals that could address these issues.

In preparing the refresh of the Tees Valley SEP, consultation was undertaken with local stakeholders (via business engagement events) to ascertain their views in relation improving the rail network within the Tees Valley. These sessions illustrated support for improvements at Darlington Station, as shown by its specific inclusion within the Transport and Infrastructure section of the refreshed SEP.

In addition, the need for improvements at Darlington Station is included in the priorities identified in the Tees Valley STP and its associated Rail Strategy.

A sub-regional launch event of the Masterplan was held in February 2017, at which a panel from Network Rail, TfN and HS2 Ltd introduced the vision for the station to businesses across the City Region. The vision for improved national, regional and local rail connectivity was well received at this launch event.

A wider consultation was undertaken with residents and business surrounding the station following the Masterplan launch and a specific exhibition room was introduced at the station to receive comments from rail users which is still available for viewing. This wider consultation showed significant support for the proposals.

A stakeholder mapping exercise was undertaken to help seek views, communicate progress and create consensus during the further development of the scheme. Stakeholders were identified and split into three groups to allow a more focussed approach to each:

- Informed: those stakeholders who are kept up to date on progress or outcomes;
- Consulted: those stakeholders whose opinions and solutions are sought throughout or at particular points; and

- Actively Involved: those stakeholders who will responsible or accountable for achieving the outcome.

Table 2.3 sets out the key stakeholders in each of these three groups and their needs identified to date.

Table 2.3: Key Stakeholders

Group	Sub-Group	Stakeholder	Needs
Informed	Local Residents / Passengers	Local Residents / Passengers	For the project to be a responsible citizen and improved quality of life and opportunities
	Rail User Groups	Bishop Line Community Rail Partnership	Adherence to legislation and protection of Darlington Station Enhanced service provision
	Press (National, Local & Rail)	Press (National, Local & Rail)	Information
	LEPs	Tees Valley LEP, North East LEP	Economic growth, improved connectivity, benefit of HS2, strong regional brand
	Local Businesses	Local Businesses	Attractive commercial sites, good transport links, access to labour
	Educational / Research Organisations	Educational / Research Organisations	Promotion of educational opportunities, improved transport links
Consulted	Train and Freight Operators	CrossCountry, TPE, relevant freight bodies	Improved rail services including performance improvements
	Rail User Groups	Passenger Focus, Urban Transport Group	Improved rail services
	HS2	HS2	Opportunity to call at Darlington Station
	Sub-National Authority	Transport for the North (TfN)	Contribution to the pan-Northern vision and Strategic Transport Plan

Group	Sub-Group	Stakeholder	Needs
	Rail Industry	English Heritage and Railway Heritage Trust	Adherence to legislation and protection of Darlington Station
	Rail Industry	Office of Rail and Road	Adherence to regulations and protecting the interests of rail users
Actively Involved	Promoter	Tees Valley Combined Authority	Economic return on investment, improved connectivity, improved quality of infrastructure, creation of jobs
	Local Authority	Darlington Borough Council (and other Tees Valley Local Authorities)	Regeneration, economic return, benefit of HS2 connectivity
	Rail Industry	Network Rail	Adherence to standards and creation of an improved asset
	Government	DfT	Value for money and passenger experience
	Train and Freight Operators	LNER, Northern	Adherence to standards, improved rail services including performance improvements

2.6.2 Wider Policy Alignment

The major national, regional and local policy priorities are summarised below with a brief commentary on how this scheme is aligned with these priorities. The policy alignment against the scheme objectives identified previously is summarised in Table 2.4.

Table 2.4: Summary of Wider Policy Alignment

Scheme Objectives	Policy Alignment			
	Transport Investment Strategy	Rail Network Enhance-ments Pipeline	TfN's Strategic Transport Plan	Tees Valley SEP, STP and Investment Plan
Economy				
Support the economic growth objectives of the Northern Powerhouse and the Tees Valley City Region	✓	✓	✓	✓
Improve east-west passenger and freight connectivity	✓	✓	✓	✓
Support sustainable local development	✓		✓	✓
National Rail				
Keep goods and people moving smoothly and safely	✓	✓	✓	✓
Grow and upgrading the network to better serve passengers and freight	✓	✓	✓	✓
Provide better value for money from the rail network	✓	✓		
Rail Network Performance				
Ensure that the rail networks can cater for expected future growth	✓	✓	✓	✓
Ensure that Tees Valley's principal rail gateways are ready for HS2 and NPR		✓	✓	✓
Deliver high quality, integrated local services		✓	✓	✓
Quality of Life				
Provide an improved gateway to Darlington and the Tees Valley		✓		✓
Provide a station and surrounding area that are accessible and safe	✓	✓	✓	✓
Improve access to employment through low carbon choices	✓	✓	✓	✓

National

Transport Investment Strategy

The Transport Investment Strategy (DfT, July 2017) sets out how the Government will build on the progress made to date and through future investment decisions will respond realistically and pragmatically to today's challenges, driving progress towards fulfilling the aims of the Industrial Strategy whilst putting the travelling public at the heart of the decisions that are made.

The Strategy outlines four main goals and guiding principles that will be considered. Through the Strategy, investment will be made in the transport network in different ways, most fundamentally by addressing the network's core capability – its condition, capacity and connectivity – but also improving the user experience and adapting the network to safeguard the environment and health.

Alignment: This scheme has an excellent fit with the Transport Investment Strategy objectives for strategic rail and economic growth. It supports and aligns with the four main goals and will deliver:

1) A more reliable, less congested, and better connected transport network;

2) Support productivity and respond to local growth priorities;

3) Enhance global competitiveness;

4) Support the creation of new housing.

The Transport Investment Strategy also recognises the crucial role that ports and airports play in the UK economy, both of which are also key elements of the Tees Valley economy, and both of which will be supported by this scheme.

Rail Network Enhancements Pipeline (RNEP)

The RNEP (DfT, March 2018) sets out an approach that applies for rail enhancements which applies to investments in new or improved infrastructure that enable service changes and other benefits. It is envisaged that these investments will enhance the capability of the railway, typically adding increased or new capacity or providing technical improvements to the way the railway runs.

The strategic vision sets out how the railway can uniquely contribute to the Government's wider objectives by providing good services for passengers and freight users, contributing to the economy and communities, and securing value for the taxpayer. Government has established four priorities for investment and action that contribute to achieving these goals.

In order to be considered for central government intervention and/or funding, the case for all enhancement decisions will need to demonstrate a robust business case, a focus on the outcomes provided for railway users and the taxpayer, the impact of the enhancement on the existing network, railway demand, the balance of the portfolio, opportunities for private investment and increasing contestability.

Alignment: This scheme will help address a number of existing challenges and will contribute to achieving the objectives for the RNEP, including:

- ***Keeping goods and people moving smoothly and safely;***
- ***Delivering benefits from committed programmes already underway;***
- ***Offering more: new and better journeys and opportunities for the future.***

Regional

TfN's Strategic Transport Plan

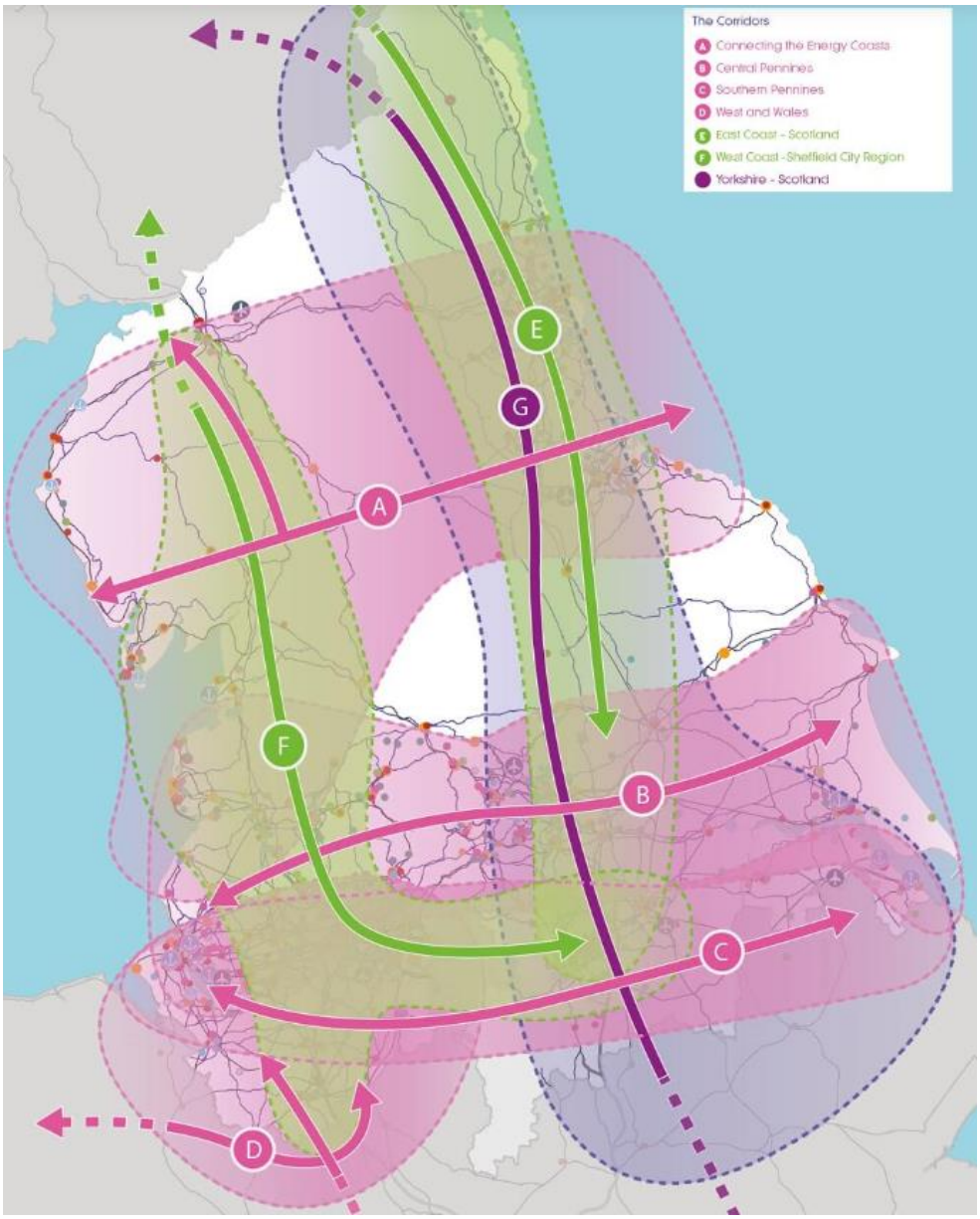
TfN's Strategic Transport Plan and accompanying initial Investment Programme (February 2019) set out the priorities for transport infrastructure investment for the next 30 years (2020-2050). The Strategic Transport Plan is a statutory document, allowing TfN and its Partners to take a leading role in developing the case for investment in the North.

The Investment Programme is built up from a series of TfN's work programmes, including the Long Term Rail Strategy, the work done to date on NPR and Integrated and Smart Travel programme, and a series of Strategic Development Corridors (SDCs) that have been identified by the most recent evidence. It comprises TfN's advice to the Government on the long term, multimodal priorities for enhanced pan-Northern connectivity. The Plan will enable TfN and its Partners to work with Government and delivery partners to secure funding and delivery of the right schemes at the right time, also providing certainty for local transport authorities to plan complementary investment.

The seven prioritised SDCs identified in the Plan each represent strategic geographical and economic areas where evidence indicates delivery of transformational growth is dependent on bringing forward major road and rail investment. The SDCs have been developed to represent where most of the largest gaps between demand and performance currently exist, and where there is likely to be the greatest economic potential to improve connectivity and the economic interaction between the existing key economic clusters and assets of the North and facilitate potential future clusters in other locations. Investment considered within

the context of these corridors is focused on interventions that will benefit the whole of the North. The Strategic Development Corridors are shown in Figure 2.19.

Figure 2.19: TfN's Strategic Development Corridors



Alignment: It is noted within the Strategic Transport Plan that improvements to east-west links are critical to support the sustainable economic growth aspirations of the North. The scheme is recognised as a pan-Northern objective falling within the East Coast to Scotland and Connecting the Energy Coasts Strategic Development Corridors. It is identified in the Investment Programme for delivery by 2027 and has been included within the reference case within the

Strategic Programme Outline Case (February 2019) for the Connecting the Energy Coasts Strategic Development Corridor.

Local

Tees Valley SEP and Investment Plan (2019-2029)

The Tees Valley SEP was refreshed to coincide with the establishment of the Tees Valley Combined Authority in 2016. The new Plan sets out the growth ambitions and priorities for the Tees Valley over the next ten years to 2026 and provides a framework for economic development activities. The priorities in the refreshed SEP are grouped into six building blocks which reflect the main challenges, areas of market failure and opportunities for the Tees Valley.

In the refreshed SEP, the Tees Valley has identified four strategic transport priorities within the City Region that will deliver pan-Northern benefits, all of which can be delivered over the next ten years.

The Investment Plan sets out the Tees Valley's investment strategy for the period 2019 – 2029 and is focused around prioritised across six growth generating themes. The ten year planning figure used in this Investment Plan is £588.2 million, which is estimated to have a total impact of supporting 16,875 direct jobs and an additional £1,480 million of additional GVA. The Investment Plan includes a local commitment from the TVCA of £25 million towards improvements at Darlington Station.

Alignment: Darlington Station is one of the four identified strategic transport priorities in the refreshed SEP. It is included within the Tees Valley Devolution Deal and Investment Plan, noting that whilst national funding to deliver the scheme, TVCA funding will be used to contribute to the delivery of the scheme, emphasising TVCA's commitment to it to facilitate pan-regional and national benefits.

Tees Valley STP

The STP is to be published in early 2020 alongside a series of supporting implementation plans. The plan includes a framework for setting out the main interventions needed based on six themes, which are closely linked together.

The 'National Rail' theme identifies that the ECML is the fundamental backbone for all of the City Region's strategic growth aspirations for rail, both passenger and freight and that HS2 and NPR will play a critical role in enhancing strategic rail connectivity in the future. However, for this to work, there is a pressing need for major investment in additional capacity on the ECML north of York to allow for the combined demands of NPR, HS2, "classic" rail and freight to be met in full.

The STP also notes that to date, investment in the UK's major stations has not been focused on the Tees Valley, meaning station facilities at Darlington (and Middlesbrough) do not reflect their role as key gateways to the City Region.

Alignment: Darlington Station is identified as a particular pinch-point on this section of the ECML and that the preferred solution for Darlington is a proposal for new station platforms and buildings to allow more long distance and local rail services to stop at its station.

South Tees Development Corporation

The STDC is the first Mayoral Development Corporation outside London. It has been set up to promote the economic growth and commercial development of Tees Valley by converting assets in the South Tees area into opportunities for business investment and economic growth.

The STDC area covers approximately 4,500 acres of land to the south of the River Tees and includes former SSI steelworks site as well as other industrial assets. The area benefits from river access and includes the deep-water port of Teesport, England's largest exporting port.

The purpose of the STDC is to further the economic development of the area through physical regeneration, social regeneration and environmental regeneration so that it becomes a major contributor to the Tees Valley economy, bringing the SSI site, and other underutilised land in the area, back in to economic use. By attracting private sector investment, the STDC will secure additional, high quality jobs for the people of Tees Valley and provide a safe environment for the workforce.

A masterplan has been developed that aims to provide a flexible framework for achieving the socio-economic ambitions for the regeneration of the South Tees area, realising that a long timeframe is necessary for the successful implementation of the plan for economic growth in South Tees and the wider Tees Valley area. The details and scale of the regeneration proposals can be viewed at: https://www.southteesdc.com.

There is an existing rail station within the STDC masterplan area – British Steel Redcar – although services stop on an infrequent basis at present. STDC is to undertake a detailed transport study in 2020 to consider future connectivity to the site and integration with the existing rail network.

Alignment: The scheme will support improved connections to the STDC site via the existing rail network, which will enable industrial investment that will create approximately 20,000 new jobs and contribute £1 billion per annum into the UK economy overall. Supporting this vision, and the impact it will have on

rebalancing the UK economy, through strategic transport improvements, will be a key element in its success.

2.7 Summary of Strategic Case

The key elements of the Strategic Case for the improvements to Darlington Station can be summarised as follows:

- The Tees Valley contains a number of centres within a small geographical area – the lack of a single dominant commercial centre means that good interconnectivity is vital for the Tees Valley to function effectively;

- The Tees Valley SEP contains the target for 25,000 new jobs and 23,000 new homes by 2026, but to ensure the proposed economic growth and additional jobs are delivered will require more inward migration from other population centres – this will mean the transport network will have to cope with a greater demand for travel to/from and around the City Region;

- There is the opportunity to increase the number of people in employment by ensuring easy and affordable access to jobs, education and training by providing a high quality, cleaner, quick, affordable, reliable, integrated and safe transport network for people and freight;

- There has been strong recent growth in both private vehicle traffic and rail passengers across the Tees Valley, but continued growth in road traffic will have significant negative consequences in terms of congestion and the environment, both of which will stifle future growth unless there is a suitable public transport alternative;

- The existing rail network in the Tees Valley serves all of the Enterprise Zones and also areas of all four prime capabilities from the Northern Powerhouse Independent Economic Review - whilst the network is fairly extensive, it is still based to a large extent on historic patterns of development and travel demand and it does not necessarily fully meet the future needs of the City Region;

- The capacity and capability of the passenger and freight rail networks that serve the Tees Valley is now becoming a concern in terms of the impact this will have on future economic growth – the ECML north of York is now at or very close to capacity with train operators struggling to deliver franchise commitments as a direct result;

- To deliver the sort of step change in journey opportunities needed to support economic growth on this section of the ECML, Network Rail's recent capacity analysis and East Coast Route Study identifies a package of investment that would

be necessary to enable the future service level of nine trains per hour on the route – this includes the requirement to improve capacity and resilience at Darlington Station;

- An option assessment process has been undertaken with the support of a range of stakeholders, including Network Rail, to identify a preferred option that comprises a package of improvements that will achieve the agreed objectives and provide a holistic solution to the identified national, regional and local passenger and freight issues;

- The preferred option goes beyond improvements to Darlington Station itself – it is also concerned with the regeneration role that an enhanced station gateway can play in relation to current and planned developments in Darlington town centre;

- Consultation in relation to the scheme has been considered since an early stage in its development and has shown strong support for the development of a fitting rail gateway for local, regional, pan-regional and national trips;

- The preferred option has a strong policy alignment with national transport and rail policy, will support the delivery of HS2 and NPR, and is identified in the Investment Programme for delivery by 2027 as part of TfN's Strategic Transport Plan.

3 The Economic Case

This chapter of the OBC assesses options to identify their impacts, and the resulting value for money. The economic, environmental, social and distributional impacts of a proposal are all examined, using qualitative, quantitative and monetised information to determine the extent to which the project's benefits outweigh its costs.

3.1 Options Appraised

A robust process was adopted for the generation and shortlisting of options, as summarised in the Strategic Case. This process confirmed that the optimum solution was the provision of new platforms to the east side of Darlington station.

Further appraisal of the options to provide new platforms on the east side of the existing station was undertaken as an early part of the recent scheme development work. This led to the identification of the preferred option, providing for an additional three platforms – two predominantly for local services and one for through services.

This is therefore the option appraised in this OBC. There are some variances within the overall concept of the options that can be examined in the next stage of scheme development, but none of these would change the fundamental performance of the preferred option, and hence the benefits appraised.

There also remain options for the phasing of the delivery of the preferred option, principally over whether to provide a fully operational through platform for southbound long distance services from the outset, or whether to return in a later phase to construct the long distance platform within the boundary of what will then be an operational railway station.

This decision will be driven by the differential costs between the two approaches, although the risks posed by leaving all of the work related to the new through platform for a later date are significant. Therefore, the preferred option makes passive provision for the new platform by providing the physical space and the foundations for the new facility, without necessarily requiring a decision at this point as to which option to take. Whilst this may have a possible impact on the value for money assessment, this is considered within one of the sensitivity tests undertaken as described later in this chapter.

Following a request from the DfT, further option assessment work has been undertaken to ensure that the preferred option provides 'passive provision' for the requirements of NPR (as currently understood). This work led to the development of a further NPR ready option that is referred to by TfN in the letter included at Appendix E. However, this NPR ready option has not been appraised within this OBC,

as agreed with DfT and TfN. However, TVCA would agree with TfN's suggestion that all attempts be made to deliver the best complete solution for Darlington at the earliest opportunity.

3.2 Methodology and Assumptions

The economic assessment of the scheme has been undertaken in accordance with current TAG guidance, including:

- TAG Unit A1 cost-benefit analysis;
- TAG Unit A2 economic impacts;
- TAG Unit A3 environmental impacts;
- TAG Unit A4 social and distributional impacts; and
- TAG Unit A5.3 rail appraisal

The methodology also references the DfT Value for Money Framework (July 2017) and guidance issued by Network Rail.

The rail specific elements of the assessment have been prepared by the Economic Analysis Team of Network Rail System Operator – the function responsible for long term planning on the rail network. This involved a uni-modal rail appraisal to assess the potential economic case for the improvements based on the most likely demand for services on the ECML and adjacent network. Further detail on the modelling approach and assumptions are set out in the Economic Analysis Technical Note included at Appendix H.

3.3 Present Value of Costs

3.3.1 Investment Costs

The cost of the proposed scheme has been estimated at Q1 2020 factor prices, as set out in detail in the Financial Case. These estimates include all costs associated with scheme preparation and construction. The costs presented in the Financial Case include real cost adjustments to allow for inflation and an allowance for risk, in the form of a quantified risk assessment (QRA).

For the purposes of the economic assessment, and in line with the guidance in TAG Unit A1.2, an optimism bias of 18% has been applied to these costs. This is the recommended uplift for a rail scheme at OBC stage. However, it is important to note

that optimism bias is only applied to costs in the economic assessment and is not included in the forecast outturn costs in the Financial Case.

For the economic assessment, all costs have also been adjusted to 2010 market prices and discounted to 2010 at an annual discount rate of 3.5% for the first 30 years after opening and 3% for years 31 to 60, in line with TAG. This represents the assumption that costs (and benefits) incurred at a future date are less valuable than costs incurred in the present.

The resulting Present Value of Costs (PVC) for the preferred option is £80.72 million (2010 prices).

3.3.2 Construction and Maintenance Delays

The capital cost of working within possessions has been allowed for in the rates used in the cost estimate. Risks have been applied in the QRA for construction delays and the values have been included in the risk cost allowance.

At this stage in the development of the scheme, it is difficult to quantify the impact of construction and maintenance delays, or how they could be mitigated. However, what will drive good adherence to schedule will be the following:

- Daily progress updates from site on key construction activities;
- Weekly progress reports to monitor progress against critical milestones, 3-6 months out;
- Monthly progress report to identify and track progress against holistic project milestones allowing enough time for Entry into Service activities to be completed, for example, safety assurance sign off and staff training; and
- QSRA (Quantitative Schedule Risk Analysis) to be undertaken on a quarterly basis (as a minimum) to assess the probability of achieving key project milestones; specifically, the milestones for which the programme is dependent on an external party – this will allow adequate float between the practical completion date, and specified timetable change date (likely to be 3-6 months).

3.3.3 Operational and Maintenance Costs

To provide for an assessment of whole life costs, the additional ongoing operational and maintenance costs for the new facilities have been assumed at 1% of the capital cost of the scheme for the first 20 years after opening and 2% of the capital cost of the scheme thereafter. Again, these have been discounted to 2010 prices as described above and are included within the PVC quoted in section 3.3.1.

3.4 Present Value of Benefits

In terms of scheme benefits, there are a range of quantifiable benefits, including:

- Journey Time Benefits, leading to User Benefits, Non User Benefits and Revenue Benefits;
- Reliability and Rail Delay Payment Benefits; and
- Wider Economic Impacts.

The first two of these are likely to deliver a significant proportion of the overall scheme benefits based on the changes to the operational railway layout as a result of the preferred option. Network Rail has undertaken some preliminary analysis of these benefits (including an assessment of actual delay payments incurred over the last five years at Darlington for all passenger services). The results of this analysis are set out in the Economic Analysis Technical Note and summarised below.

3.4.1 Journey Time Benefits

The key journey time benefits of the preferred option will accrue to both long distance and local services. The former should benefit from improved approaches to and exits from Darlington using the existing infrastructure as well as reduced platform capacity demands and conflicts with local services. The latter should benefit from reduced waiting to cross Darlington South junction and a faster approach to the new local platforms.

In the SOBC, the following assumptions were made about the likely journey time savings:

- 1 minute for ECML stopping services approaching from the south;
- 0.5 minutes for ECML stopping services approaching from the north;
- 0.2 minutes for ECML through services that do not stop at Darlington; and
- 0.5 minutes for local services.

TVCA believes that these journey time assumptions are reasonable, but accepts that further work will be required with the rail industry to refine these benefits. The Economic Analysis Technical Note sets out some of the key next steps as follows:

- Use of detailed technical scheme plans (for example, through RailSys analysis or similar);

- Performance modelling of agreed timetables on the new layout; and
- Development of a timetable that reflects the capability of the infrastructure, demonstrating what savings can be realised.

This level of detail in relation to the economic analysis should be undertaken alongside the further GRIP3 work, but, for the purposes of this OBC, the key journey time benefits are still considered to be 1 minute for all services on the ECML south of Darlington and 0.5 minutes for local services.

Based on these journey time savings, Tables 3.1 and 3.2 set out the results of the economic appraisal for long distance services and local services respectively. In this analysis, the forecast journey time improvement drives user benefits (reduced journey time), revenue benefits (additional passengers) and non-user benefits (reduced highway congestion).

Table 3.1: Journey Time Benefits for ECML Services

Element	Benefits (£m PV, 2010 prices)
Rail user journey time benefits	99.97
Non user benefits - road decongestion	56.12
Non user benefits - noise, air quality, greenhouse gases & accident benefits	10.96
Indirect taxation impact on government	-14.64
Non user benefits - road infrastructure cost changes	0.28
Revenue transfer	82.83
TOTAL	235.51

Table 3.2: Journey Time Benefits for Local Services

Element	Benefits (£m PV, 2010 prices)
Rail user journey time benefits	2.72
Non user benefits - road decongestion	0.70
Non user benefits - noise, air quality, greenhouse gases & accident benefits	0.14
Current TOC revenue benefits	0.02
Indirect taxation impact on government	-0.24
Non user benefits - road infrastructure cost changes	0.00
Revenue transfer	1.15
TOTAL	4.49

3.4.2 Non User Benefits

Mode shift to rail as a result of the improved journey times arising from the scheme will give highway decongestion, safety and some quantifiable environmental benefits. Impacts on the highway network have been appraised in accordance with TAG.

The additional rail mileage is calculated through MOIRA and combined with car occupancy and diversion factors from TAG to gain an estimate of the total reduced car mileage that can be expected as a result of the scheme. The reduced car mileage has been applied as per the method set out in TAG Unit A5.4 to gain a value for the marginal external costs, which provides the non user benefits shown in Tables 3.1 and 3.2 above.

3.4.3 Revenue Benefits

Revenue benefits arising from increased patronage due to the predicted journey time savings are also included in Tables 3.1 and 3.2 above. More detail on how these benefits have been derived using standard industry approaches are included in the Economic Analysis Technical Note.

3.4.4 Reliability Benefits

The Network Rail Capacity Analysis Report indicates the significant constraints with the existing infrastructure at Darlington, and so removing some of these constraints will have benefits for the rail industry, both in terms of improved reliability and, in

real terms, in the reduction in Schedule 8 payments to TOCs as a result in delays caused by the existing infrastructure.

The reliability benefits for the preferred option have therefore been estimated based on predicted Schedule 8 payment savings which could result from a reduction in delay as a result of reducing conflicts and interactions between local and intercity services. Using actual Schedule 8 payment figures for the last five years, these have also been grossed up to reflect that the reduction in delay also brings a benefit to passengers which is not captured in the pure financial saving or time saving benefits.

Table 3.3 sets out the results of this analysis, showing the significant reliability benefits that the preferred option could bring, noting that there may be further reliability savings for services calling at Darlington from the revised layout which could be quantified through the additional RailSys analysis suggested previously.

Table 3.3: Reliability Benefits for All Services (£m PV, 2010 prices)

Element	Northern Primary Delay + LNER, XC, TPE	Northern Primary and Reactionary Delay + LNER, XC, TPE
Rail user and Non user benefits	24.78	34.82
Current TOC revenue benefits	0.05	0.08
Indirect taxation impact on government	-1.67	-2.12
Non user benefits - road infrastructure cost changes	0.00	0.00
Revenue transfer	8.71	11.08
TOTAL	31.88	43.86

The precise quantification of reliability benefits will be subject to ongoing validation during option selection through to single option development. It will ultimately be dependent on the final scheme layout and will focus on mean time calculations between failure/s. It is Network Rail's preferred policy to fit all current and new infrastructure with remote condition monitoring (RCM), such that a "prediction and prevention" approach is adopted prior to any reliability issues.

3.4.5 Overall Level of Benefits

Based on these assessments, the overall Present Value of Benefits (PVB) for the preferred option at this point is £283.86 million (2010 prices).

As noted previously, this estimate of benefits will be refined as more development work is undertaken on the preferred option, including a refresh of timetable development following outputs of the Industry's East Coast Main Line December 2021 Event Steering Group.

Further investigation is also required on the potential for splitting the current Bishop Auckland to Saltburn through services. Although the initial analysis from Network Rail suggests that this has some user disbenefits, there may well be further operational benefits of such an approach, including the potential to increase services frequencies in the future between Darlington and Bishop Auckland.

Journey time and reliability savings for local services may be underestimated as the approach taken to date considers only those savings on the direct approach to Darlington. It could be that there is already resilience built into the timetable to reflect the current deficiencies in the infrastructure layout and operation that could provide further journey time savings and/or provide the opportunity to re-introduce stops at Teesside Airport station for all services with no adverse impact on end-to-end journey times of operational costs.

Finally, even with the infrastructure constraints elsewhere on the Tees Valley's rail network, there may be opportunities to introduce new local services with minimal additional cost, such as a direct hourly service between Darlington and Hartlepool. Such a service would significantly enhance Hartlepool's connectivity to the national rail network whilst also encouraging mode shift from private car given the significantly shorter rail journey time that would be provided.

All of these are likely to provide benefits over and above those quantified for this OBC and will be investigated in due course, but should provide a level of comfort into the appropriateness and the robustness of the approach taken to date to identify the principal user benefits of the preferred option.

3.5 Environmental Impacts

3.5.1 Overview

In assessing the environmental impacts of the scheme, an overview of the planning and environmental policy context has been provided for the station and its surroundings, as outlined in Table 3.4. The table also outlines the physical environment in which the scheme sits.

Table 3.4: Environmental Overview

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
Air Quality	Promoting sustainable transport, paragraph 102, requires that the planning system should support opportunities to maximise sustainable transport solutions and this should be taken into account in both plan-making and decision-making. Ground conditions and pollution, paragraph 181, states that opportunities to improve air quality or mitigate impacts should be identified, such as through travel management, and green infrastructure provision and enhancement. Planning decisions should ensure that any new development in Air Quality Management Areas (AQMAs) and Clean Air Zones (CAZs) are consistent with the local air quality action plan. All planning decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants.	There are no AQMAs within 2km of the scheme. The nearest AQMA is approximately 27km north of Darlington Station and is known as Durham City No.2 Order 2014 AQMA. Given the substantial distance of this AQMA from the scheme, it is considered highly unlikely that the scheme will impact this AQMA. The nearest Defra Pollution Climate Mapping (PCM) model compliance link is the A167, which is approximately 500m north west of the scheme. The maximum predicted annual average NO_2 concentration level for 2019 for this road is up to 24.4µg/m^3, well below the annual average air quality objective of 40µg/m^3 for NO_2. Concentrations of NO_2 for the PCM links are predicted to decrease in future years. The nearest local authority monitoring sites to the scheme are diffusion tubes D2 and D10, which recorded concentrations of 30.9ug/m^3 and 34.1ug/m^3 respectively[1]. There are several sensitive receptors located close to the site, including residential properties, several schools and a hospital: • Skerne Park Primary School located approximately 340m to the west of the site; • The Rydal Academy located approximately 420m to the east of the site; • St John's C of E Academy located approximately 800m to the east of the site;

[1] Darlington Borough Council, June 2019. 2019 Air Quality Annual Status Report (ASR) [online]. Available from https://www.darlington.gov.uk/environment-and-planning/pollution/air-quality/ [Accessed January 2020]

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
		• Polam Hall School located approximately 800m to the west of the site; and • Hundens Lane Day Hospital located approximately 550m north east of the site.
Historic Environment	Conserving and enhancing the historic environment, paragraph 189, states that applicants must describe their significance of any heritage assets affected. Where a proposed development includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require an appropriate desk-based assessment, or where necessary a field evaluation. Paragraphs 194 and 195 identify that any harm to the significance of a designated heritage asset should require clear and convincing justification. Development will be refused consent unless it can be demonstrated that substantial harm is necessary to achieve substantial public benefits.	There are Grade I and II Listed Buildings located within the site and its 1km buffer, including the Grade II* Listed Bank Top Railway Station. The Church of St John the Evangelist Grade II Listed Building is located approximately 80m to the west of the site and has a line of sight to the proposed scheme. No other Grade Listed Buildings are located within 100m of the site. A Statement of Significance for Bank Top Station was prepared in 2017 for the Darlington Station Masterplan. The Statement of Significance considered what is important about the station building and its setting and what is not, so that any changes being planned can protect as much as possible of what makes the place special. The Statement of Significance identified that much of the main structure of Bank Top Station including many of the internal walls, the outer walls of the station building, the train shed and station building roofs, and the railway lines which run both into and past the station are considered to be of exceptional significance meaning they are “aspects which are seminal to understanding the place, which if lost or substantially harmed, would destroy or greatly compromise its significance.” The platforms and many of the internal spaces within the station buildings are considered to be of considerable significance meaning they are “aspects which

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
		go a long way to help understand the place, and which, if lost or substantially harmed, would notably diminish the significance but not destroy it." There are no Scheduled Monuments or Registered Battlefields within 2km of the site.
Landscape	Strategic policies, paragraph 20, of states that strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for ' … conservation and enhancement of natural, built and historic environment including landscapes and green infrastructure'. Paragraph 127 states that planning decisions should ensure developments are '… sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities)'.	The site lies within National Character Area (NCA) 23, Tees Lowlands, which is a broad, open plain dominated by the meandering lower reaches of the River Tees and its tributaries with wide views to distant hills. The area contrasts the large conurbation around the Lower Tees and Tees mouth of intertidal and wetlands habitat areas alongside heavy industry with the rural area to the south and west, which is largely agricultural. At a local level the site is located within the urban centre of Darlington and the Landscape Character Area (LCA) of the Lower Skerne and Hurworth Moor, as identified in the Darlington Landscape Character Assessment. The site is bounded by residential, commercial and municipal properties to the east and west, with a wooded area and pasture bounding the southern half of the eastern boundary. The site bound by the B6280 Yarm Road to the north and the A66 to the south. The existing infrastructure is generally surrounded by approximately 2m high security fencing. The equipment consists of the railway lines, switches and crossings, Overhead Line Equipment (OLE), signalling and Darlington Station and associated

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
		infrastructure, including the existing Darlington Station car park. Any new buildings will be adequately assessed in landscape terms to ensure that the overall design, scale and massing of the developments are appropriate to the existing environment.
Biodiversity	Conserving and enhancing the natural environment, paragraph 170, states that planning policies and decisions should contribute to and enhance the natural and local environment by '… protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils … minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'. Habitats and biodiversity, paragraphs 175-177, provide guidance on the determination of planning applications that may negatively impact upon biodiversity, habitat sites and the application of presumption of sustainable development.	Ecological sites are listed below, and have been determined using the Defra data website MAGIC[2]: • The nearest Site of Special Scientific Interest (SSSI) is Hell Kettles SSSI, which is approximately 2.5km south west of the site. Neasham Fen SSSI is located approximately 3.9km south-east of the site. • Geneva Wood is a Local Nature Reserve (LNR) directly adjacent to the rail line as it curves east to Saltburn. Along this line there is also Branklin Moor LNR and Maidendale Fishing and Nature Reserve LNR. Rockwell LNR is located approximately 1.7km north east of the site; Brinkburn LNR is located 2.2km north west of the site, and Drinkfield Marsh LNR is approximately 3.2km north of the site.
Noise and Vibration	Ground conditions and pollutions, paragraph 180, identifies that planning decisions should ensure that '… new development is appropriate for its location' and in doing so should '… mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development and avoid noise	The site is not located within a Noise Important Area (NIA). The nearest NIA to the site is the A167 road (NIA ID: 10119), located approximately 690m to the north west of the site. There are NIAs relating to rail within 2km of the proposed site. There are noise sensitive receptors present along the

[2] MAGIC data website. Available from https://magic.defra.gov.uk/home.htm [Accessed January 2020]

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
	giving rise to significant adverse impacts on health and the quality of life'.	length of the site, including residential properties in relatively close proximity, such as those at Pensbury Street, Victoria Road, Back Lane, Appleby Close, Waverley Terrace and Neasham Road. There are several schools in vicinity of the railway, including Skerne Park Primary School, the Rydal Academy, Teesside University Darlington, St John's C of E Academy and Polam Hall School. Other sensitive receptors include Neasham Road Surgery and Hundens Lane Day Hospital. Existing background noise levels are likely to be characterised by rail movements on the existing railway lines and traffic on the local road networks. The scheme has the potential to introduce new noise sources to residential properties surrounding the site. This requires careful consideration in relation to the design of new infrastructure along with appropriate noise assessments to ensure that new development does not introduce unacceptable noise into the existing environment.
Water Environment	Meeting the challenge of climate change, flooding and coastal change, paragraphs 155, 156, 161,163 and 165, identify considerations such as flood risk assessments, sequential and exception tests, statutory engagement and sustainable urban drainage systems.	There are no watercourses located within or immediately adjacent to the site. The River Skerne is a Main River that flows in a southerly direction and is located approximately 360m to the west of the site. The Environment Agency's flood map for planning indicates the site is located within an area of low flood risk (Flood Zone 1). There is an area of medium and high flood risk (Flood Zones 2 and 3 respectively) located approximately 110m to the west of the site associated with the

Environmental Consideration	National Planning Policy Framework (NPPF) (2019)	Physical Environment
		River Skerne. This land has between a 1 in 1,000 to 1 in 100 year and 1 in 100 year or greater annual probability of river flooding for Flood Zones 2 and 3 respectively.
Climate (resilience and greenhouse gases)	Meeting the challenge of climate change, flooding and coastal change, planning for climate change, paragraph 150, states that new development should be planned for in ways that '… avoid increase vulnerability to the range of impacts arising from climate change' and '… can help reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of building should reflect the Government's policy for national technical standards'. Paragraph 153 states that in determining applications, local planning authorities should expect new development to '… take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption'.	The UK Climate Projections 2018 (UKCP18) provide probabilistic climate projects for the UK for a range of emission scenarios and future time periods. The UK Local and Regional CO_2 Emissions Estimates identifies a total of 552.0 (kt CO_2) in 2017 including; 197.3 (industry and commercial), 170.2 (domestic) and 188.3 (transport). Darlington has experienced an overall reduction from 882.9 (kt CO_2) in 2005. Extreme weather events such as heavy rainfall and heat waves are projected to become more frequent and more intense as a result of climate change. Climate change is also likely to result in gradual changes to average temperatures and rainfall. The proposed development has potential to impact on greenhouse gas emissions from the construction stage, associated with construction materials used, transport of materials to site and plant use on site. The proposed increase in the use of rail as a result of the scheme has the potential to reduce greenhouse emissions overall. Emissions associated with maintenance of the proposed works are not anticipated to generate significant quantities of greenhouse gases.

Building upon the information provided above, environmental risks and opportunities relating to the scheme have been identified utilising a RAG (Red/Amber/Green) ratings system, as follows:

- Red: policy conflicts and environmental constraints that cannot be addressed using established and readily deliverable design solutions or mitigation thereby posing a threat to project delivery;

- Amber: policy conflicts and environmental constraints that, whilst potentially significant, can likely be resolved / mitigated with potential implications for program and budget; and

- Green: policy compliant environmental constraints that are likely be resolved / mitigated within program and budget.

The RAG rating allows for professional judgement and the overall RAG rating should reflect the 'most adverse category' identified. The current RAG assessment for each environmental topic as described in the following paragraphs.

3.5.2 Noise

Amber
The proposed scheme is not located within a NIA and the nearest NIA is approximately 690m north west of the proposed scheme. There are NIAs relating to rail within 2km of the proposed scheme. There are noise sensitive receptors present along the length of the proposed scheme, including residential properties, schools, the Hundens Lane Day Hospital and places of worship. There is a five storey high residential building immediately (less than 10m) east of the existing Garbutt Square Car Park and south of Garbutt Square itself. *Construction* Noise arising from demolition and construction as part of the proposed scheme has the potential to give rise to adverse impacts, especially at the receptors located nearby. However, the potential impacts are likely to be temporary and given the small scale of the project they are also likely to be relatively short term. With the implementation of appropriate mitigation and best practice measures, which should be outlined within a Construction Environmental Management Plan (CEMP), potential impacts associated with noise and vibration of demolition and construction of the proposed scheme are likely to be mitigated, although it is noted that working hours are likely to be limited to the daytime. At this stage it is not known whether night-time works will be required. *Operation* At this stage, it is intended that the proposed scheme would enable additional train movements on this section of the ECML and the proposed scheme would be extending the existing station footprint eastwards, closer to some residential receptors. As such, operational train noise has the potential to give rise to adverse impacts as it is possible that the noise levels at nearby receptors could increase. It is noted however, that given the small scale of the project, the increase of operational train noise levels may not be dissimilar to the current levels and therefore the change in noise may not be significant. However, an operational noise assessment will be required.

The proposed car park of the station has the potential to give rise to adverse impacts as a results of increased vehicle movements. Consequently, there may be increased noise levels at adjacent residential receptors and the St John the Evangelist Church.

The facilities of the station also have the potential to give rise to potential effects including mechanical and electrical plant, Public Address and Voice Alarm and passenger noise. A noise assessment of these sources will also be required to consider any potential effects.

Risks

There is the potential for an increase in noise levels at nearby noise sensitive receptors due to demolition, construction and operation of the scheme, arising from mobile and stationary sources. No noise and vibration modelling has been undertaken at this stage, and the potential impact on noise and vibration is currently not known. At this stage, noise surveys have also not been carried out, which would normally determine a baseline noise level for the area. While issues surrounding noise impact have been raised by DBC, no formal liaison has been undertaken at this stage to determine the noise survey requirements.

As some of the adjacent buildings appear to be five storeys high, noise mitigation using barriers could be challenging.

Opportunities

Mitigation and enhancements to noise protections along the proposed scheme, such as layout, orientation and noise barriers could be considered as part of a sustainable design.

3.5.3 Air Quality

Amber

There are no AQMAs within 2km of the proposed scheme, however there is Defra PCM link and sensitive receptors located along the length of the scheme, including residential properties, schools and a hospital.

Construction

In the short term, construction activities have the potential to generate dust due to earthworks, construction and demolition. A construction dust assessment should be carried out, to determine the potential risk of dust to dust soiling and human health, along with mitigation measures, if required.

At this stage, construction traffic volumes are not expected to be large enough to cause a perceptible change in air quality. Any changes in air quality would be short term and temporary in nature, lasting only the duration of the demolition and construction phase. At the time of writing, no construction traffic data is available to screen traffic movements against the Environmental Protection UK (EPUK)/Institute of Air Quality Management (IAQM) land use guidance[3]. This should be carried out once data are available, to determine if an air quality assessment would be required.

With the implementation of appropriate mitigation and best practice measures, which should be outlined within a Construction Environmental Management Plan (CEMP), significant air quality effects are not anticipated during construction.

[3] EPUK/IAQM, 2017. Land-use planning and development control: planning for air quality [online]. Available from http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf [Accessed January 2020]

Operation

The operation of the proposed scheme is not expected to result in adverse impacts on local air quality. At the time of writing, no traffic data is available to screen the traffic movements associated with the operation of the proposed scheme. Once this data is available, screening should be carried out using the EPUK/IAQM4 guidance to determine if an air quality assessment would be required. In addition, an assessment of emissions from the proposed MSCP should be undertaken, given its proximity to residential receptors. Should a detailed air quality assessment be required, mitigation measures would be recommended if necessary.

Risk

Air quality modelling has not been undertaken at this stage and therefore potential impacts of the scheme on nearby sensitive receptors are not known. Similarly, likely predicted concentrations are therefore not available for comparison with critical loads to determine impacts on ecological receptors sensitive to nitrogen or sulphur deposition. Although it is considered that the scheme presents a low risk to air quality, this cannot be confirmed at this time. This could present a cost and programme risk at later stages of scheme development.

Opportunities

The proposed scheme could lead to improvements in local air quality in the longer term, by enabling additional train services to pass through the station, as well as providing car parking for users who can travel longer distances by rail rather than by car.

3.5.4 Greenhouse Gases

Green

Since local authority records began in 2005, Darlington has experienced a reduction in overall CO_2 emissions.

Construction

There is potential for Greenhouse Gas (GHGs) emissions during the construction of the project, however, given the relatively small scale of works these are unlikely to have a significant effect on GHGs. A Construction Environmental Management Plan (CEMP) will also be produced and used during the construction of the interventions to ensure that best practice measures are adopted to minimise GHG emissions associated with the construction activities and materials used, where practicable.

Operation

Through design and compliance with railway standards, it is also unlikely that the proposed scheme would pose a greater risk of impacts from climate change, such as flooding or temperature extremes, than the existing station.

Risks

The materials that will be used in the proposed scheme are currently unknown. Where possible, however, the scheme should promote the use of low carbon materials. There is the potential for a large amount of concrete to be required for the proposed scheme, which is considered to be a carbon intense material.

It is also unknown at this time as to where the construction materials would be sourced from as this could incur emissions in transporting the material to site. This could also be

considered as an opportunity to reduce emissions, by sourcing materials locally where possible.

The potential impact on carbon emissions associated with the construction and operation of the proposed scheme is unlikely to affect the ability of the Government to meet its carbon reduction targets. Although this project on its own is unlikely to affect the Government's ability to meet its carbon reduction targets, it should be acknowledged that the cumulative impact of this project in combination with similar rail projects across the country, may hinder progress to meeting the UK carbon reduction targets. Therefore, cumulatively there is the potential for a conflict with national policy on carbon reduction.

Opportunities

The operation of the proposed scheme would enable more journeys to be taken by public transport using the train. This could reduce the number of car journeys required and therefore the amount of emissions emitted.

Assessment of the impact of a changing climate on the drainage of the proposed scheme will likely be required within the drainage assessment. This will identify what design measures are required to increase the resilience of the proposed option due to climatic changes.

3.5.5 Landscape and Townscape

Amber

The site lies within NCA 23, Tees Lowland, which is a broad, open plain dominated by the meandering lower reaches of the River Tees and its tributaries with wide views to distant hills.

Construction

In the short term, construction activities have potential to impact upon the townscape and landscape surrounding the site, lasting the duration of demolition and construction. However, any impacts from construction vehicles and materials are likely to be short term and temporary. With the implementation of appropriate mitigation and best practice measures, which should be outlined within a CEMP, however significant air landscape and townscape effects are not anticipated during construction.

Operation

In addition to the issues raised within the Historic Environment assessment, A Landscape Visual Impact Scoping Assessment will be required, and likely appraisal/ assessment following from this scoping exercise. This assessment will identify any potential longer-term impacts and potential mitigation measures. The assessment will inform the overall design, scale and massing of the scheme.

Risks

The project team must remain mindful of the sensitives of National Character Area 23 and multiple Listed Structures on site. Impacts on this stemming from design could present a cost and programme risk as the project progresses.

Opportunities

The proposed scheme could lead to improvements in townscape and landscape, providing high design quality additions to the town of Darlington and the wider Tees Valley City Region.

3.5.6 Biodiversity

Amber

The closest ecological site to the proposed scheme is Geneva Wood LNR, which is located adjacent to the rail line south of the station as it runs east. There are also two other LNRs on this rail line and two SSSIs within 4km of the proposed scheme.

There is potential for protected species to use the existing rail corridor as a green corridor, and the potential for bats to use the station building itself.

Construction

These LNRs are located on the existing line to the east that is unaffected by the proposed scheme. As such, the potential impact is likely to be low, however no ecological surveys have been carried out to confirm this definitively at this stage.

As works are planned for the station building itself, there is the potential to impact on bats, should the station be being used by roosting bats. A ecological impact assessment including bat scoping and potentially bat surveys should be undertaken for the development to better understand this risk.

The two SSSIs are located at a distance from the proposed scheme (2.5km and 4km) and are considered highly unlikely to experience any impacts as a result of the construction of the scheme.

Operation

It is considered unlikely to that there would be impacts from the operation of the proposed scheme on biodiversity. However, this would need to be confirmed through ecological surveys as described above.

Risk

Aerial mapping shows that the site is likely to support typical rail corridor habitats such as scrub and tall ruderals as well as rail underbridges that may have bat roost potential. All these habitats have the potential to support protected and notable species, and there is potential for invasive plant species such as Japanese knotweed (Fallopia japonica), to be present throughout the site.

At this stage, no ecological surveys have been carried out for the area surrounding the proposed scheme. Protected species may use the rail corridor as a green corridor. Surveys should be carried out to determine the presence of protected species and any potential impacts the proposed scheme could have on them. The same can be said for Geneva Wood LNR, which should be surveyed by an ecologist in conjunction with the proposed scheme.

There is the possibility that bats could be using the station building to roost, and this should be determined and an appropriate action plan agreed prior to demolition and construction works commence on the building itself.

Opportunities

There is the potential for ecology mitigation, enhancement measures and carefully designed compensation areas to achieve a net gain in biodiversity which may lead to a significant contribution to the achievement of the commitments made by policy.

3.5.7 Historic Environment

Amber

There are a number of Grade I and II Listed Buildings located within 1km of the site, including the existing Bank Top Railway Station, which is a Grade II* Listed Building. The Church of St John the Evangelist Grade II Listed Building is located approximately 80m to the west of the site and has a line of sight to the proposed scheme. There are no Scheduled Monuments or Registered Battlefields within 2km of the site.

Construction

Construction activities associated with both the station and the setting of the listed buildings including St John's Church, has the potential to impact upon the assets and what makes them 'special'.

Much of the main structure of Bank Top Station including many of the internal walls, the outer walls of the station building, the train shed and station building roofs, and the railway lines which run both into and past the station are considered to be of exceptional significance meaning they are "aspects which are seminal to understanding the place, which if lost or substantially harmed, would destroy or greatly compromise its significance". The platforms and many of the internal spaces within the station buildings are considered to be of considerable significance meaning they are "aspects which go a long way to help understand the place, and which, if lost or substantially harmed, would notably diminish the significance but not destroy it".

Given the nature of the proposed scheme it is anticipated that the works will result in alterations to the station itself, and its setting. The setting of St John's Church is also likely to be altered with some aspects of the scheme.

It is essential that a sensitive approach is taken to the design of new internal arrangements to ensure that the existing listed assets are protected. Similarly, any new development must be sympathetic to the adjacent listed assets and their setting.

With the implementation of appropriate design consideration, mitigation and best practice measures, it is anticipated that an acceptable scheme can be developed which would protect and potentially enhance the listed buildings and their setting, but this should remain a high risk until more detailed scheme development is complete.

Operation

It is considered unlikely to that there would be impacts from the operation of the proposed scheme once constructed – the scale of these impacts will become clear as scheme development progresses.

Risks

The design of the proposed scheme should facilitate best practice and sensitive appreciation of the historic assets - poor design and a lack of understanding of the assets and their quality could result in a loss if 'specialness' and compromise the overall listing of the assets.

Opportunities

There are opportunities to improve the setting of the existing historic assets. A number of poorly executed design decisions historically (in the 1970s) currently detract from the character of the building. This scheme has the potential to replace many of these assets rationalising the overall station and restoring original uses and feelings of space within the station. Similarly, public realm improvements have the potential to rationalise the setting of the building enhancing the environment around the listed assets and going some way to providing breathing space between the listed assets.

3.5.8 Water Environment

Amber

There are no watercourses located within or adjacent to the proposed scheme. The River Skerne is a Main River that is approximately 360m west of Darlington Station. There is an area of medium and high flood risk (Flood Zones 2 and 3 respectively) associated with the River Skerne located approximately 110m to the west of the proposed scheme.

There are some discrete local areas of surface water flood risk at low to medium risk around the proposed scheme area.

Construction

Construction activities, in particular any track lowering works, would result in the disturbance of soil. This could lead to the mobilisation of sediment within surface runoff, which could be transported into a surface watercourse. The detailed drainage design is yet to be determined; however, given the nature of the proposed scheme it is anticipated that the works will not lead to any significant difference in hard standing, and no additional risks to drainage or flood risk are anticipated.

Flood risk can increase if permeable areas are increased. However, the area of works associated with the proposed scheme are already hardstanding so there would not be an increase in permeable surfaces given the present scheme design. As such, surface water flood risk is unlikely to be impacted.

With the implementation of appropriate mitigation and best practice measures, which should be outlined within a Construction Environmental Management Plan (CEMP), significant road drainage and water environment effects are not anticipated during construction.

Operation

It is considered unlikely to that there would be impacts from the operation of the proposed scheme on road drainage and the water environment. This should be confirmed once detailed design for the proposed scheme has been completed, and once drainage designs are available. As the proposed scheme is not located within a flood zone, it is considered unlikely that a considerable impact would occur to flood risk.

Risks

The mitigation for water quality and hydrology impacts arising from road/rail drainage is well researched and understood, therefore any impacts identified would be mitigated through good design to ensure no conflict with policy or legislation. The design of the proposed scheme should facilitate good pollution control practice.

However, at this stage, a drainage strategy is not available and conclusions cannot be drawn as to whether an Flood Risk Assessment (FRA) would be required.

Opportunities

There is the potential to implement Sustainable Drainage Systems (SuDS) as part of the drainage design for the proposed scheme. SuDS can reduce flood risk (often arising from permeable surfaces in areas not at risk from river flooding), improve amenity and biodiversity by providing habitat.

3.6 Social Impacts

A number of potential social impacts have been identified for the scheme. The themes of these impacts are based upon the Network Rail Aspects and Impacts Guidance Note, and include:

- Supporting Britain's economic development.
- Respecting cultural history and rail heritage;
- Making rail a great experience;
- Inspiring tomorrow's workforce;
- Keeping communities safe;
- Creating positive industry partnerships;
- Making travel accessible;
- Creating engaged employees;
- Connecting communities with the environment; and
- Being a caring neighbour.

An evaluation of social impacts and their proposed impacts as a result of the redevelopment of Darlington Station is presented in Table 3.5.

Table 3.5: Social Impact Assessment

Theme	What does this mean?	Proposed Impacts
Supporting Britain's economic development	Harnessing the power of rail to create social and economic opportunities for people and businesses.	The proposed station will act as a connectivity gateway for the wider Tees Valley City Region enabling improved connections from the Tees Valley to London and other key economic centres. The improvements will also promote connectivity for those working and living in the Tees Valley through journey time savings.

Theme	What does this mean?	Proposed Impacts
		Redevelopment of the station will provide construction jobs, supply chain boosts etc. The economic benefits of the scheme are outlined in the Economic Case.
Respecting cultural heritage and rail history	Appreciating cultural history and rail heritage – both the physical heritage and the people's history.	The proposed station rationalisation and future development, is proposed to respect and complement existing historic assets and offer improvements and enhancements where possible. The potential first phase one of the scheme seeks to be delivered to celebrate a significant anniversary for the Darlington to Stockton railway in 2025, to coincide with a wider programme of events to celebrate this, held in the redevelopment station portico area.
Making rail a great experience	Creating a life-enhancing railway experience for all who use it.	The improvements to Darlington Station will improve journey times, punctuality, station accessibility and facilities, increasing the overall experience of travel for passengers.
Inspiring tomorrow's workforce	Enabling access to the right skills, at the right time, from the UK's diverse talent pool.	Tees Valley wide STEM skills and training are promoted. Projects such as Darlington Station show practical examples of these skills offering inspiration to future engineers, but, potentially through engagement, practical STEM project experience.
Keeping communities safe	Keeping everyone safe around the railway, every day.	The redevelopment of the existing underpass, portico and the public realm improvements will increase the inclusivity and perceived safety of the station. Segregating car parking and pedestrian areas as well as public realm rationalisation will

Theme	What does this mean?	Proposed Impacts
		improve passenger movement safety throughout the station. Appropriate surveys will be undertaken in relation to noise and lighting to ensure that the proposed development does not detrimentally impact upon the surrounding community.
Creating positive industry partnerships	Developing relationships, in the supply chain and beyond, that are ethical, responsible and have a positive social impact.	The proposed redevelopment of the station may bolster the supply chain linkages and create work for SMEs.
Making travel accessible	Making rail infrastructure and information available to everyone.	The station improvements are proposed to deliver faster and more frequent train journeys, whilst increasing accessibility for all demographics through more pedestrianised public space. Accessibility improvements will open the station up to those who have previously experienced issues accessing the site. Station rationalisation and signage improvements will ensure that the site is easier to navigate.
Creating engaged employees	Be a business that people are proud to work for.	Employment opportunities are likely to be generated during construction of the proposed works and following increased operations associated with the proposed new station. An improved working environment through an improved station and gateway to the town will help to instil pride of place into workers within the station and also those travelling to the wider town.
Connecting communities with the environment	Working to protect and enhance our lineside surroundings and the wider environment.	The proposed works will increase access to high quality public realm for the town of Darlington, the wider Tees

Theme	What does this mean?	Proposed Impacts
		Valley and all those who use the station.
Being a caring neighbour	Promoting positive relationships with our lineside communities.	Provision of new services within the station may benefit neighbouring occupiers. Visual amenity and public realm improvements associated with the station re-development will improve amenity for neighbouring occupiers. Management during construction and operation will be required to prevent adverse impact upon neighbouring occupiers.

A high level assessment of the key societal benefits identified for the scheme is provided in Table 3.6 – these benefits have been ranked by their impact and likelihood of occurrence to provide an overall score, using a scale based upon and adapted from the table identified as 'Environmental and Social Risk Matrix-Opportunity' within the Network Rail Environmental and Social Management Plan.

In terms of the outcomes of the assessment, the scores should be read as follows:

- Scores totalling 8+ - significant wide ranging societal benefit expected to occur at least once a year;
- Scores totalling 5-7 - wide ranging societal benefit expected to happen between once in five years up to once a year; and
- Scores totalling 2-4 - societal benefit expected to happen between once in 25 and once in five years.

Table 3.6: Assessment of Key Social Benefits

Social Benefit	Social Benefit Theme(s)	Benefit Score	Likelihood Score	Overall Score
Increased capacity and connection to the wider national rail network including the proposed HS2 network and NPR	Supporting Britain's economic development	5	5	**10**

Social Benefit	Social Benefit Theme(s)	Benefit Score	Likelihood Score	Overall Score
	Making rail a great experience			
Improvements to public realm and station facilities, improving quality of life for all users of Darlington Station	Making rail a great experience	4	5	**9**
Supporting the growth and development of the Tees Valley through increased local services. This increase will provide an increase to standard of living and options for residents of Tees Valley	Supporting Britain's economic development	4	5	**9**
Providing alternatives to personal car use, increasing the use of sustainable transport modes such as walking and cycling	Connecting communities with the environment Keeping communities safe Making travel accessible	3	5	**8**
Supporting the growth and development of the Tees Valley to meet the aspirations of the TVCA SEP	Supporting Britain's economic development	4	4	**8**
Improvements to commuting quality and options for local residents	Making travel accessible	3	5	**8**
Improvements to the station made to an Equalities Act (2010) standard	Making travel accessible	3	5	**8**

Social Benefit	Social Benefit Theme(s)	Benefit Score	Likelihood Score	Overall Score
Improved perception of safety within the station - this is particularly evident from the proposed works to the existing underpass	Keeping communities safe Making rail a great experience	3	5	**8**
The proposed works will respect and enhance existing listed features on site	Respecting cultural history and rail heritage	2	5	**7**
Increased connectivity providing commercial opportunities for local businesses	Being a caring neighbour Supporting Britain's economic development	3	4	**7**
Potential additional local employment opportunities from capacity enhancements, providing opportunities to standard of living	Inspiring tomorrow's workforce	2	5	**7**
Potential additional local employment opportunities from new retail units, providing opportunities to standard of living	Inspiring tomorrow's workforce	2	5	**7**
Provision of local construction jobs for proposed works, providing opportunities for improvements to standard of living	Inspiring tomorrow's workforce	1	2	**3**

3.7 Wider Economic Impacts

The wider economic impacts of the initial Darlington Station Masterplan interventions were assessed over a 20 year period and set out in the SOBC. The analysis indicated that the preferred option could deliver wider economic impacts of around £31.0 million (2010 prices). This figure has been retained for the OBC as the essence of the preferred option that provided for these benefits has not changed since the SOBC.

The wider impacts of the estimated journey time improvements have not been assessed at this stage, subject to the suggested further work and their subsequent refinement mentioned previously.

As noted above, further benefit could be accrued from enhanced local services (both in terms of frequency and available destinations), although it is noted that some additional services are reliant on additional infrastructure elsewhere. Work undertaken for the Darlington Station Masterplan identified that enhanced local services could provide an additional £287.3 million in benefit over 60 years (2010 prices), although this figure has not been included in the economic analysis at this time.

3.8 Value for Money

The Value for Money assessment of the proposed scheme has been undertaken in line with TAG and is based on assessment of the economic, environmental, social, and financial impacts as described previously. The Benefit-Cost Ratio (BCR) is defined by dividing the PVB by the PVC.

The initial BCR includes the monetised benefits described previously. The calculation of the initial BCR is set out in Table 3.7 for the preferred option.

The adjusted BCR, that includes consideration of the wider economic impacts as described above, is also set out in Table 3.7.

It is clear that the Darlington Station proposals provide **High** value for money, based on the categories set out the DfT Value for Money Framework. The analysis to date provides confidence that even with further refinement, there is considered to be enough headroom to ensure this remains the case.

Table 3.7: Initial and Adjusted BCR Calculations for the Preferred Option (2010 prices)

	Assessment	Comments/Notes
PVB (£m)	283.86	Cumulative benefit of journey time benefits for ECML and local services, reliability benefits for all services and high level safety benefits
PVC (£m)	80.72	Derived from the information in the Financial Case and assuming required level of Optimism Bias at OBC stage
Initial BCR	*3.52*	
Wider Economic Impacts (£m)	31.0	As set out in the SOBC
Adjusted PVB (£m)	314.36	
Adjusted BCR	**3.89**	

3.9 Sensitivity Tests

In order to understand how sensitive the benefits described above are to a range of alternative parameters, some sensitivity tests have been performed. These primarily relate to:

- The benefits that accrue to longer distance services; and
- The overall costs of the scheme.

The impacts of changes in the key assumptions around these are explored below.

The economic analysis demonstrates that a significant proportion of the scheme's benefits are derived from the journey time benefits to longer distance services. To consider the sensitivity of these assumptions, the impact of assuming only a 0.5 minute time saving for ECML services was investigated. The resulting benefits are summarised in Table 3.8.

Using these benefits, the PVB would be reduced to £166.10 million (2010 prices), with a corresponding Initial BCR of 2.06 and an Adjusted BCR of 2.44.

Table 3.8: Sensitivity Test for Journey Time Benefits for ECML Services (0.5 minute Journey Time Saving)

Element	Benefits (£m PV, 2010 prices)
Rail user journey time benefits	49.98
Non user benefits - road decongestion	28.06
Non user benefits - noise, air quality, greenhouse gases & accident benefits	5.48
Indirect taxation impact on government	-7.32
Non user benefits - road infrastructure cost changes	0.14
Revenue transfer	41.41
TOTAL	117.75

TVCA also commissioned some independent validation of these journey time benefits set out in the SOBC to help support the OBC. This validation was based on the December 2019 timetable of train services, and so represents a worse case in terms of the number of trains on the ECML, when compared to the value for money assessment presented in Section 3.8. The comparative set of benefits for the 1 minute time saving for services between Northallerton and Darlington using this approach is summarised in Table 3.9.

Table 3.9: Sensitivity Test for Journey Time Benefits for ECML Services (December 2019 Timetable)

Element	Benefits (£m PV, 2010 prices)
Rail user journey time benefits	66.94
Non user benefits - road decongestion	17.38
Non user benefits - noise, air quality, greenhouse gases & accident benefits	3.23
Indirect taxation impact on government	-1.32
Non user benefits - road infrastructure cost changes	0.09
Revenue transfer	51.14
TOTAL	137.29

Using these benefits, the PVB would be reduced to £185.64 million (2010 prices), with a corresponding Initial BCR of 2.30 and an Adjusted BCR of 2.68.

A further sensitivity test examined the impact on the economic analysis if these benefits were reduced, again assuming that the journey time saving realised was only 0.5 minutes. The results of this test are summarised in Table 3.10.

Table 3.10: Sensitivity Test for Journey Time Benefits for ECML Services (0.5 minute Journey Time Saving and December 2019 Timetable)

Element	Benefits (£m PV, 2010 prices)
Rail user journey time benefits	34.09
Non user benefits - road decongestion	8.08
Non user benefits - noise, air quality, greenhouse gases & accident benefits	1.50
Indirect taxation impact on government	-0.61
Non user benefits - road infrastructure cost changes	0.04
Revenue transfer	23.19
TOTAL	66.20

Using these benefits, the PVB would be reduced to £114.55 million (2010 prices), with a corresponding Initial BCR of 1.42 and an Adjusted BCR of 1.80.

Even with these significantly reduced journey time savings applied across a lower number of services than currently planned on the ECML in 2021, the scheme would still represent value for money.

It is also considered prudent to test an absolute worst case assessment of the benefits of the scheme. Analysis has shown that for the initial BCR to be above 1.0, the PVB needs to be around £83 million (2010 prices). Based on the work presented in the Economic Analysis Technical Note, the journey time saving benefits to achieve this PVB could be derived if there was only a minimal (0.2 minute) time saving for the small number of through services currently planned within the 2021 timetable.

In other words, for the scheme proposed not to offer value for money at the current cost estimate, there would need to be no journey time benefits at all to services on the ECML in 2021 that stop at Darlington, with the only services that would benefit from any journey time savings being local rail services. This is completely at odds

with the findings of Networks Rail's Capacity Analysis described in the Strategic Case and is therefore considered to be highly unlikely.

The final sensitivity test relates to the cost estimates for the scheme, mindful of the fact that there has been a number of rail schemes in recent years where costs have increased significantly once construction has commenced.

In line with TAG, the optimism bias used is 18%, given that this is an OBC. This has been reduced from a 66% level as included in the SOBC, which is a considerable reduction. It was therefore considered prudent to test the impact of assuming an optimism bias of 30%.

This gives a PVC for the scheme of £88.93 million (2010 prices), and corresponding BCRs as follows:

- Initial BCR (as presented in Table 3.7): 3.19;
- Adjusted BCR (as presented in Table 3.7): 3.54;
- Initial BCR Sensitivity Test (as presented in Table 3.8): 1.87; and
- Initial BCR Sensitivity Test (as presented in Table 3.9): 2.09.

Indeed, the PVC would need to double from its current level for the Initial BCR for the sensitivity test presented in Table 3.8 to reduce to 1.0. This would represent a major miscalculation of the scheme's current cost estimate, one which has been reviewed by Network Rail and a Tier 1 contractor.

In summary, therefore, the economic analysis and sensitivity tests undertaken provide confidence that a benefit : cost ratio of above 2.0 is achievable even with conservative assumptions around the key benefits and likely costs, representing High value for money.

4 The Financial Case

This chapter of the OBC provides information on the affordability of the project and its funding arrangements. It sets out the most recent cost estimates and their financial profile.

4.1 Costs

4.1.1 Base Scheme Costs

A separate Cost Estimate Report has been produced detailing the costs and how they have been identified for the scheme options. This report is included at Appendix I and presents the estimated preparation and construction cost of the preferred option as described in this OBC. This base cost is £76.48 million.

The structure of the cost estimate follows the structure of the Rail Method of Measurement 1 (RMM1). The method of measurement used to prepare this cost estimate, the rates included and method of measuring various works elements selected are complementary to the level of information provided.

No allowance has been made within this cost estimate for other development/project costs at this stage. These are costs that are not directly associated with the construction works or project/design team professional fees, but form part of the total cost of the project to the client. These costs may include insurances, planning fees, land purchase, rental costs, compensation, relocation costs of personnel/products/equipment/habitats, marketing costs and contributions to local authority obligations.

An allowance for design team professional fees under design and build procurement has been made including consultants design up to Form A. A separate allowance has been made for managing possessions and site supervision. No allowance has been made for Network Rail internal costs at this stage.

The cost estimate report details any other assumptions or exclusions applicable to the cost estimate provided.

4.1.2 Risk Allowance

A Quantified Risk Assessment (QRA) has been carried out by the project team. The identification and quantification of risk through this process has led to the inclusion of a risk allowance in the scheme costs.

Given the level of development of the scheme, the QRA focussed on key technical risks based on current knowledge and did not explore wider project risks such as

procedural, approvals and land acquisition at this time. The outputs from the QRA will also be of use in targeting mitigation actions for key risks through subsequent stages of the scheme's delivery.

A risk workshop with the design team was held following conclusion of technical work to review the proposed designs and identify key risk items. The objective of the workshop was identification of key technical risks based on the current level of development of the scheme. More detail on the key risks are set out in the Management Case. Risks highlighted through the workshop have been reviewed with basis for costs against each risk item – the basis for these costs are stated within the schedule.

For the purposes of analysing the combined risk profile, the variation in cost beyond that allowed in the cost estimate has been assessed. As proportions of the base cost for each respective risks, costs for 'Minimum', 'Likely' and 'Maximum' costs should the risk transpire, have been developed.

The risk analysis has been carried out using Monte Carlo analysis through use of @RISK software. The analysis used 5,000 iterations of the Pert Distribution to develop a risk value to a 95% confidence level for the combined risks.

The output from the @RISK analysis is shown in Figure 4.1. The total QRA value is £9.24 million, based on the 95% confidence level.

Figure 4.1: Calculated Risk Profile

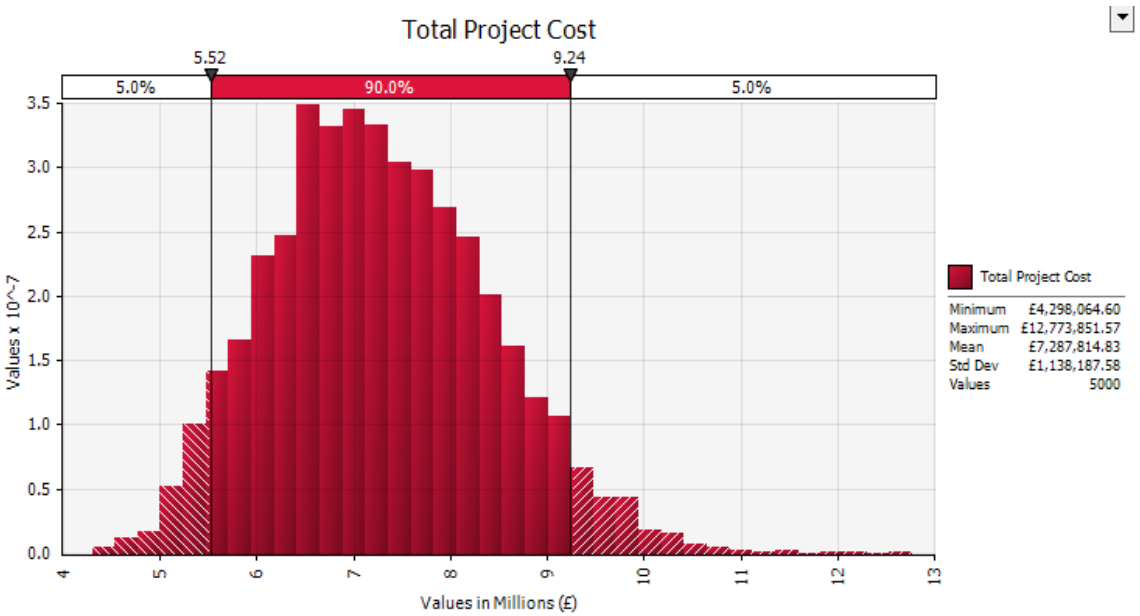


Table 4.1 shows the risk-adjusted base cost.

Table 4.1: Base Scheme Costs including Risk Allowance for Preferred Option (£ million)

Base Cost Estimate	Risk Allowance	Risk-adjusted Base Cost Estimate
75.71	9.24	84.95

4.1.3 Inflation Allowance

Table 4.2 illustrates the conversion of the risk-adjusted base cost to outturn costs, that is including the impact of real terms construction price inflation – this assumes a 5% increase on the cost estimate per year, based on the latest Construction Price Indices for new infrastructure construction. This is considered to be robust given the prevailing rate of inflation at the current time.

Table 4.2: Base and Outturn Scheme Costs for Preferred Option (£ million)

Risk-adjusted Base Cost Estimate	Inflation Allowance	Outturn Cost Estimate
84.95	11.01	95.96

These scheme costs are considered proportionate and affordable in relation to the issues identified in the Strategic Case and the predicted benefits of the scheme assessed in the Economic Case. The scheme cost has been derived in a robust way using information from current and recently completed projects. The works have also been quantified, based on the current scheme designs.

Going forward, at each relevant milestone, following the development of the design, Network Rail will update the cost estimate to reflect new information. At each project stage, Network Rail will identify costs of design, construction, preliminaries, inflation and understand the associated project risks.

Probability and risk exposures (both programme and cost) are reviewed during the QCRA (Quantitative Cost Risk Assessment) and QSRA (Quantitative Schedule Risk Analysis) process. Robust reviews are completed at each stage, including a Cost Planning Governance Panel review.

4.1.4 Maintenance Costs

The costs of maintaining the proposed new infrastructure at Darlington station are likely to be broadly neutral due to the fact the amount of maintainable assets is not expected to change significantly. It is anticipated that any new assets will be incorporated in Network Rail's settlement for the next Control Period (CP7).

The operational costs from a Network Rail perspective regarding internal operations staff is assumed to be neutral. The operational costs for the new station facility (staffing and day to day running) will form part of the Station Change proposal and are expected to be covered by the incumbent Station Facility Operator (SFO).

However, an allowance for additional operating and maintenance costs has been included in the Economic Case, at a rate of 1% of the base capital costs for the first 20 years after opening and 2% of the base capital costs thereafter.

As part of the ongoing estimating process, Network Rail will consider the whole life costs of the scheme.

4.2 Spend Profile

The total outturn cost estimate of the preferred option has been split over time between the current year and the opening year, as shown in Table 4.3. The estimated profile is based on the current version of the project plan discussed in the Management Case.

Table 4.3: Yearly Breakdown of Scheme Costs (£ million)

Financial Year	Anticipated Spend
2020/21	3.77
2021/22	12.88
2022/23	15.40
2023/24	31.24
2024/25	32.66
TOTAL	**95.96**

The spend profile will continue to be reflective of the required commitment of each party for the next stage of the project and will be typically update at the outset of each project stage, with four weekly updates thereafter as part of Network Rail's Monthly Business Reporting process.

Development of a robust programme which fully incorporates the products derived from GRIP will be cost loaded in order to identify period forecasts and spend profile, and then monitored.

4.3 Budgets/Funding Cover

The work done to date has concluded that the design and delivery costs for the interventions considered in this OBC will most likely be jointly funded from RNEP and the TVCA Investment Plan.

To recognise the economic benefit to the City Region of the scheme, if the proposed improvements at Darlington Station can be delivered by 2025, TVCA is offering to contribute up to £25 million (fixed, nominal) from its Transforming Cities Fund allocation, which must be spent by March 2023, to the preparatory works and capital costs as forward funding for receiving some of the regeneration benefits.

This funding was agreed at the TVCA Cabinet meeting in November 2018, confirmed as part of the agreement to the Tees Valley Investment Plan in January 2019, and has been used to develop the scheme to this point.

This funding has nominally been allocated to the station gateway element of the preferred option, given that the station enhancements and operational railway elements are designed to address an immediate capacity and operational issue identified by the rail industry, and therefore these are seen as more appropriate to be funded through the RNEP.

Therefore, a commitment to progress the scheme through the RNEP is critical, not only to start drawing down the TVCA contribution, but also to ensure that the delivery programme for at least the first phase of the scheme can be achieved.

Discussions are continuing with the DfT and LNER around the mechanism for delivering the MSCP element of the preferred option. At the time of preparing this OBC, these discussions have not yet concluded, and so the full capital cost of the MSCP is included at present. However, there is the potential to remove this should a suitable revenue sharing arrangement be agreed at a later date. This again represents a worst case in terms of the capital costs and economic analysis presented.

Opportunities for other private finance contributions have not been identified at this stage. The preferred option will potentially provide some commercial opportunities, but this will be revisited during the development of the Full Business Case (FBC) for the scheme.

5 The Commercial Case

This chapter of the OBC outlines the commercial viability of the scheme, and the procurement strategy which will be used to engage the market. It provides the intended approach to risk allocation and transfer, contract and implementation timescales, as well as how the capability and technical expertise of the team delivering the scheme will be secured.

5.1 Commercial Viability

The Darlington Station scheme is considered to be commercially viable as Network Rail will be considering whole life costs during its review of the scheme costs set out in the Financial Case and there has been an allowance made for operating and maintenance costs within the Economic Case. At this point, however, the whole life costs of the proposed new infrastructure at Darlington Station are likely to be broadly neutral due to the fact the amount of maintainable assets is not expected to change significantly.

The scheme predominantly comprises new or upgraded transport infrastructure that will be maintained by Network Rail and the SFO (with regard to the operational railway and station enhancements element of the scheme) and DBC (with regard to the majority of the station gateway elements) once constructed. There are no other ongoing costs that will affect the commercial viability of the improvement.

Network Rail as rail system owner and operator would adopt all the works on the operational railway and operate and maintain these enhancements as part of its wider network responsibilities.

Under its Full Repairing and Insuring lease with Network Rail as landlord, LNER is responsible for operation and maintenance of Darlington Station for a period of 99 years. It is party to various existing contracts to execute these obligations and TVCA's expectation is that the station enhancements elements of the scheme, along with the improvements to the portico to the west, would be added to this portfolio.

For the MSCP, TVCA anticipates aligning with the existing operating models and commercial arrangements, rather than setting up separate provision. LNER operates and maintains the existing car park facilities under its lease with Network Rail as landlord and franchise agreement with DfT for the ECML, and the new MSCP could function on similar terms.

However, TVCA and DBC believe that as the new MSCP will have a greater number of spaces than currently provided, there is the opportunity to explore revenue sharing arrangements with LNER as a contribution to the cost of the upfront car park works.

Any arrangements devised will seek to ensure that LNER's forecast ongoing revenue stream from car parking is unaffected.

No specific market engagement has yet taken place on the scheme proposals other than the involvement of a Tier 1 contractor as part of the preparation of the cost estimate. However, given the nature of the works involved, it is expected that there will be a high demand and strong competition amongst engineering contractors to secure the contract for this scheme given previous experience of such schemes included in the RNEP and delivered previously in the Tees Valley.

5.2 Output-based Specification

The anticipated outputs of the first phase of the preferred option are set out in the Strategic Case and include:

- Two new bay platforms on the east side of the existing station;
- The track between these bay platforms and Darlington South Junction designed to ensure the local services can operate independently from the ECML;
- Provision for a new through platform adjacent to the Up Goods Line;
- A new station building, with multi-modal connections, to service the new platforms;
- A new accessible footbridge linking the new platforms and station building with the remainder of the existing station;
- A new transport interchange and MSCP adjacent to the new station building;
- Access improvements for pedestrians and cyclists from Parkgate; and
- Enhancement to the portico and transport interchange facilities on the western side of the station.

The improvements need to be delivered the within available funding envelope, ensuring best value, within the required construction design standards, maximising the economic objectives of the scheme, but with risk reduced to a level that is as low as reasonably practicable.

Development or changes to Network Rail's property requires a number of approvals from Network Rail and may also need approval from the Office of Rail and Road (ORR) and the TOCs who have contractual and regulatory arrangements with Network Rail.

In developing the scheme, TVCA has considered whether separate delivery routes and contracts for each element of the scheme (or a combination of the elements) would secure better value for money, allow a phased approach to delivery and minimise risk. The conclusion from this assessment is that the most effective and efficient route to delivery would be to separate out the scheme into three elements:

- **Operational Railway** – the track improvements and new east side platforms (both local and through services);
- **Station Enhancements** – the new station building and accessible footbridge, together with any internal changes to the existing station required to provide the latter; and
- **Station Gateway** – new MSCP and multi-modal interchange to the east, the enhancement to the portico and improved interchange to the west, and any amendments to the current approach from Parkgate.

Dividing the scheme into these three elements for the purpose of the delivery of the scheme from the OBC onwards was also considered to align with the suggested funding sources and availability and recognises that the MSCP in particular needs to be completed first given the proposed location of the new platforms and station building.

It is expected that the operational railway and station enhancements elements of the scheme will align with Network Rail's Guide to Railway Investment Projects (GRIP) process – the accepted approach to the planning, delivery and management of rail projects. The GRIP process comprises a standard project lifecycle, standard project deliverables, project control processes and governance arrangements.

The design work on the operational railway and station enhancements elements will need to be developed in line with relevant railway standards such as:

- Railway Group Standards;
- Technical Specifications for Interoperability;
- Network Rail company standards;
- Accessibility standards (Equality Act); and
- ORR and Health and Safety Executive guidance.

In taking forward all three elements of the scheme, the following actions are required:

- Achieve cost certainty;
- Minimise preparation costs in regard to scheme design;
- Minimise construction delivery costs;
- Achieve an efficient delivery programme;
- Achieve an appropriate quality of design;
- Incentivise innovation;
- Maintain project knowledge;
- Obtain contractor input to risk management and assessment;
- Obtain planning permission and all necessary consents; and
- Engage with contractors and stakeholders throughout planning to scheme delivery.

5.3 Procurement Strategy

The procurement strategy identifies the best way of achieving the objectives of the scheme and value for money, taking account of the risks and constraints. Having established the three elements of the scheme for the purpose of delivery, the most appropriate procurement strategy for each was then considered, bearing in mind that the operational railway and station enhancements elements will be led by Network Rail, with the station gateway element continued to be led by TVCA.

5.3.1 Operational Railway/Station Enhancements

Given that it has been determined that the best funding route for the operational railway and station enhancements elements of scheme is currently through the RNEP (as described in the Financial Case), the DfT will be the Lead Client for delivery of these elements. This would follow the established Memorandum of Understanding (MoU) between DfT and Network Rail for delivery of schemes where DfT is the funder.

Procurement of further scheme development and design services will depend on the contracting strategy adopted by Network Rail/DfT. The procurement strategy for the delivery of the scheme, will be driven by the project output specification, key project objectives and appraisal of the design and associated risks.

Network Rail Commercial and Procurement teams will support and identify the most effective route to market for design development and delivery. Three main types of contract are usually considered:

- Competitive tender;
- Cost plus; and
- Framework/alliancing,

each having their own benefits depending on the scheme's objectives.

The types of contract to be used for this scheme could include:

- Hub and Spoke with a Programme Management team providing specialist design and delivery integration - specific elements of scope could be delivered via a framework supplier or competitively tendered; and
- One supplier that delivers the entire scheme with specialist supply chain or sub-contractors.

The advantages of the former are potential value for money opportunities with the use of frameworks, with the disadvantages being intensive integration activity, if multi-disciplined. With reference to the latter, the main advantage is a single point of accountability with potential disadvantages being some inflexibility and lack of market competition.

In January 2020, Network Rail announced the award of 82 framework contracts to deliver design services, worth an estimated £400 million for Control Period 6 and up to £640 million including the options to extend the framework into Control Period 7. The Design Services Framework (DSF) consists of four multi-discipline frameworks and 78 single-discipline frameworks and is aligned to the various Network Rail regions.

The signalling and systems work on the operational railway carries some complexity, due to its increased safety risk and critical interface with the broader rail network. However, the works are still of a standard nature in the context of railway projects and for which the contracting market is suitably developed and liquid to generate competition.

The station enhancements elements are considered to be partially complex, in the fact that the new bridge spans the ECML and interacts with a listed building, but are similar in nature to other works across the rail network procured recently and so should generate sufficient competition.

5.3.2 Station Gateway

In relation to the station gateway elements, the scope of works is substantially standard civil engineering, for which there is expected to be sufficient competition to secure best value.

The two main types of contracts for consideration for the MSCP and the multi-modal interchanges are:

- Separate design and construction (traditional approach) - the design is prepared for the delivery body under one contract and a separate construction contractor takes responsibility for building the works to the design provided; and

- Design and build - the construction contractor both designs and builds the works, for example under a turnkey contract.

The multi-modal interchanges at the east and west sides of the station would suit a design and build contract. The west side (Victoria Road) of the station is characterised by the red brick clock tower and portico whereas the east side offers the opportunity for a more contemporary design with the new MSCP and new station becoming key features split from the existing station footprint by the ECML. To achieve the required degree of interconnectivity with the MSCP and a cohesive architectural vernacular across the entire station site, it would be beneficial to have all works carried out under the same design and build contract.

At this stage of the project, it is TVCA's intention to procure a design and build contractor, as this also aligns with the preference for risk transfer as well as time and price certainty.

DBC has significant experience of delivering significant capital projects through design and build frameworks, having recently successfully delivered:

- Feethams MSCP – 650 spaces, value of £7.5 million;

- Darlington Hippodrome and the Hullabaloo – refurbishment of historic theatre and creation of a new national children's theatre; and

- Construction of three new office blocks, Feethams House, Bishopgate House and Business Central, with a combined value of £24 million.

More information is provided on these in the Management Case.

At this stage of the project it is anticipated that TVCA and DBC would lead on the land assembly, enabling works and the station gateway elements working closely with

Network Rail to ensure the future provision for the operational railway and station enhancements elements are considered. The majority of the works would be procured through frameworks with some works potentially delivered by internal resources.

Both TVCA and DBC's procurement practice is set out in their Constitutions which establishes that all Officers and Members must:

- Follow the rules set out in its Contract Procedure Rules if they purchase goods, services or construction works;
- Take all necessary procurement, legal, financial and other professional advice;
- Declare any personal financial interest in a contract;
- Thoroughly appraise the purchasing need and asses the risk;
- Maintain confidentiality during the purchasing process;
- Complete a written contract or TVCA order before the supply of goods, delivery of service, or construction works begin;
- Keep records of dealings with suppliers; and
- Assess each contract afterwards to see how well it met the procurement need and best value requirements.

The Contract Procedure Rules set out in TVCA's Constitution are intended to:

- Secure the best value for TVCA;
- Provide those involved in spending public money, with clear and transparent procedural requirements to complement existing professional skills, integrity and commitment and to protect officers from legal challenge;
- Ensure fairness to those seeking to contract with TVCA;
- Prevent fraud and corruption or the suspicion of it; and
- Ensure TVCA operates within the law.

TVCA and DBC in partnership would ensure the works are in line with EU guidelines and rules, or whatever procurement rules are in operation at the time of letting the relevant contracts.

The operational railway and station enhancements elements are within existing Network Rail owned land and buildings. However, to deliver the station gateway element of the scheme land on both the east and west side of the station needs to be acquired and to date several key properties on both sides of the station have been acquired by agreement. DBC has therefore prepared a Land Assembly Strategy to determine how best to secure the land required for the station gateway elements of the scheme.

The Land Assembly Strategy promotes acquisition by agreement where possible and the pursuit of a Compulsory Purchase Order (CPO) from Summer 2020 for the land interests that cannot be acquired by private treaty. This will enable the station gateway element to be delivered by 2023 and critically makes the MSCP available to accommodate relocated existing parking provision in order for the operational railway and station enhancements elements to be delivered.

Specialist legal advice concluded that due to the number of properties involved it is unlikely that all can be acquired by agreement and ultimately a CPO will be required. Therefore, a CPO is being prepared (subject to Cabinet in principle agreement in February 2020) and will be initiated at the appropriate time in the programme.

The area covered by the proposed CPO is wider than the individual properties that will need to be acquired and includes some land already owned by DBC and Network Rail (as agreed with Network Rail). A CPO extinguishes all third party rights and restrictive covenants over a piece of land, therefore, the scope of the CPO as proposed removes a major risk that the delivery of the scheme could be compromised should a currently unknown right be uncovered.

A resolution to exercise its compulsory purchase powers will be made by DBC in August 2020, a date driven by the latest date by which to make the CPO to ensure delivery of the station gateway elements of the scheme by 2023. This allows the maximum possible time in advance for acquisitions by agreement, although in practice these can continue right up until DBC serves notices to appropriate the land following confirmation of the CPO. Side Roads Orders required to allow the closure of highways (wholly or part of) or the creation of new private means of access will be progressed in tandem with the CPO.

5.4 Payment and Charging Mechanisms

At this time, it is envisaged that Network Rail will lead on the design and construction contract for the operational railway and station enhancements elements, and the successful contactor will be paid through standard mechanisms as with other similar schemes within the RNEP.

As part of future stages of the GRIP process, there will be further scheme level consideration of payment and charging mechanisms in accord with Network Rail procedures.

For the station gateway elements, the payment mechanism will be negotiated with the contractor based on the final shape of the individual contracts. This will reflect the agreed principles of the standard contract documentation, shaped to the specific circumstances of the scheme. The mechanisms developed will need to be workable in practice, clear in operation and incentivise timely, effective and efficient performance, as well as driving innovation in the short and longer term. The incentives will include performance targets and a deduction mechanism that incentivises strong performance. This will be underpinned by the clear and transparent output-based specification against which performance can be measured.

5.5 Risk Allocation and Transfer

A more detailed account of the approach to risk management for the scheme is included in the Management Case. However, at this stage of scheme development and prior to the letting of any of the construction contracts, the scheme cost estimate contains a greater proportion of risk borne by Network Rail and TVCA than will remain after the appointment of the successful contractors.

Some of the risk is captured and quantified within the QRA process as outlined in the Financial Case. Once the tendering process for the various construction contracts is complete, some of the risk (such as scheme cost increases associated with the design and construction) can be transferred to the successful contractors. However, the risk of costs being higher than currently predicted remains until this tendering process is complete.

Other risks that will be transferred to the successful contractor at the appropriate time include those that encompass appropriate planning conditions, estimations of the quantities, mitigation measures and resources. Network Rail and TVCA will continue to take responsibility for risks that encompass land, residual planning and environmental permission in the next stage of design work, as well as the following specific risks:

- The need for changes to the scheme;
- Inaccuracies or incompleteness of any of the data or information related to the scheme;
- Pre-contract advance works which might result in delivery and programme delays to the contractor;

- Pre-contract arrangements with others/third parties; and
- Change in the law.

Other risks, such as the identification of statutory undertakers' equipment, and mitigation costs associated with these, can be removed from the QRA element of the scheme costs completely if they do not materialise, or transferred to "actual" scheme costs if they do materialise, rather than remaining within the risk allocation.

5.6 Contract Length and Management

5.6.1 Operational Railway/Station Enhancements

Based on the project plan, it is expected that a "Decision to Deliver" will be taken by the end of 2021 at the latest, meaning that the main construction contract for the operational railway and station enhancements elements is likely to run for a period of around 30 months from Spring 2022 to the end of 2024.

Network Rail's supply chain is divided into Route Services (goods and services) and capital delivery projects (delivery of major projects). Network Rail spends over £7 billion per year with its supply chain, 98% of which is with British companies, and worked directly with around 4,000 suppliers during the 2018/19 financial year.

Network Rail has developed a standard suite of contracts that it believes reflect a sensible allocation of risk and responsibility between the different parties and that these contracts will save management time for Network Rail and their suppliers and contractors when setting up and managing contracts.

5.6.2 Station Gateway

As the station gateway elements, particularly the new MSCP can, and need to be, delivered first, the start dates will depend on the length of time to complete any CPO process required, with an overall construction period expected of around 18 months. The anticipated timeline would see construction of these elements from Autumn 2021 to Spring 2023.

TVCA's project governance and management arrangements post-contract award will evolve from the governance arrangements put in place to develop the business case through to contract award.

These arrangements will align with the risks and obligations arising from the selected delivery model and will incorporate best practice, such as guidance from the National Audit Office's Good Practice Contract Management Framework and the Crown Commercial Service's Commercial Capability: Contract Management Standards. They

will also incorporate lessons learned from contract management on the delivery of other comparable major projects.

The arrangements will be designed to ensure that TVCA's post-contract management is strong and effective to deliver the outcomes TVCA require from the scheme, with strong oversight at a senior level, early identification and tackling of emerging issues, tight technical management and effective and integrated work stream arrangements.

5.7 Human Resource Issues

No significant human resources issues have been identified that could affect the deliverability of the scheme, although it is recognised that it will have a considerable human resources requirement, across Network Rail, TVCA, DBC, the design teams and the contractor teams.

TVCA has a senior management team that is very experienced in developing and delivering major projects – its Finance Director and Commercial and Delivery Director have both private and public sector experience and have worked on the successful delivery of major infrastructure and other projects, both public-private and public-public.

At this time, sufficient resources have been identified to deliver the scheme and further details of the required capabilities and assigned resources are set out in the Management Case. The resource requirement will be kept under review by the Programme Board and, if necessary, additional resources brought in.

6 The Management Case

This chapter of the OBC describes how the scheme will be managed and delivered.

6.1 Evidence of Similar Projects

Network Rail has collective experience in delivering a diverse range of high profile rail projects, and have a strong track record in the procurement and delivery of major track and station improvements on the ECML and across the North of England in recent years including:

- King's Cross remodelling - £260 million (on site);
- Leeds station improvements - £160 million (on site);
- Werrington grade separation - £200 million (on site);
- Doncaster Platform 0 - £30 million (completed in 2017);
- Peterborough Station - £50 million (completed in 2014); and
- Liverpool City Region upgrades - £340 million (completed in 2019 as part of the Great North Rail project).

There is therefore clear evidence of the delivery of similar projects to the Darlington Station improvements by Network Rail and that this scheme sits well within the RNEP.

For the other elements of the scheme, DBC has a strong track record in the procurement and delivery of similar schemes, with examples of recent projects including:

- Feethams MSCP - completed on time in 2018, this substantial car park provides 650 parking spaces servicing vehicles visiting the adjoining proposed Feethams Leisure Complex. The project involved a full precast concrete frame and flooring solution procured under a design and build framework contract at a cost of £7.5 million.
- Business Central – a 3,443 sq m state of the art office and conference building situated opposite the rail station on the 30-hectare Central Park Tees Valley Enterprise Zone. Completed on time in 2015, Business Central was delivered within budget at £6.6 million via a design and build framework contract.
- Darlington Hippodrome and the Hullabaloo – the project successfully repaired and restored Darlington's Grade II listed Edwardian variety theatre. Involving a wholesale upgrade of public facilities to enhance the visitor experience, the

theatre become physically accessible and two former shops were brought back into use. The project was delivered in 2017 via a £13 million design and build framework contract.

- Feethams House - due to complete in April 2020, Feethams House will provide high-class Grade A accommodation for small and medium-sized enterprises in key sectors. Offering circa 3,624 sq m of office space across five storeys, potentially creating around 300 new jobs in the professional services, digital and creative fields. The £8.5 million offices are being jointly funded by DBC, TVCA and the European Regional Development Fund. The works are being delivered via a design and build framework contract.

- Housing Programme - since 2015, DBC's housing programme has delivered 223 units across 11 sites with a total value of £29.25 million.

6.2 Project Dependencies

The Strategic Case identified a number of other transport and non-transport interventions with a relationship to the Darlington Station improvements, and the latest CP6 Network Rail Delivery Plan for the London North Eastern and East Midlands Route identifies the following interventions planned on this section of the ECML:

- Power upgrades between York and Edinburgh; and

- Around £220 million of planned renewals spending between York and Newcastle, as well as the continued roll-out of the Digital Railway programme.

One of the objectives of all of these committed work packages is to increase the number of services using the ECML and the journey speed of these services – the Darlington Station improvements are fully aligned with this objective. Any opportunity for synergies between the committed work packages and the works required for this scheme should be examined as the GRIP process progresses, particularly where there is any requirement to change power and/or signalling equipment on the ECML in the Darlington area.

As part of the development of a single concept for the NPR network, TfN continues to develop, with Network Rail and HS2 Ltd, the interventions required on the Leeds-Newcastle corridor to achieve the desired conditional outputs. The Darlington Station improvements are a key part of that single concept package and TfN has been provided with all of the necessary information relating to the scheme to assist in its work, as well as being fully supportive of the scheme itself.

One of the agreed scheme objectives is to "Ensure that Tees Valley's principal rail gateways are ready for major projects such as HS2 and NPR" – this entails developing

a holistic solution at Darlington for national, regional and local passenger and freight services. The design of the preferred option has been developed so as to accommodate the future requirements of HS2 and NPR in so far as practical at this stage, but also so as not to preclude what the requirements of HS2/NPR may be in the future.

The Network Rail capacity analysis identified a number of other issues across the rail network in the Tees Valley that would need to be addressed in order to realise the future train service ambitions, particularly capacity issues at Middlesbrough station. A business case for these improvements will be brought forward in due course, and TVCA will continue to work with Network Rail and the relevant TOCs to identify the most appropriate interventions across the rest of the network in order to realise the local rail ambitions. It is fundamentally clear however, that any increase in the frequency of local passenger rail services cannot happen without intervention at Darlington.

The optimum solution for a gauge-cleared route for freight services to/from the south is via Yarm, and GRIP4 work is to commence shortly to establish the single preferred option for the required improvements. Should this route be gauge-cleared, this will have a benefit for Darlington in that the requirement for all freight services to undertake the reversing manoeuvre in the sidings to the east of the station would be removed. The scheme proposed in this OBC allows this manoeuvre to continue, to provide operational flexibility and so is not dependant on the provision of a gauge-cleared route via Yarm.

However, if this latter improvement was found to be not feasible or not affordable, the scheme proposed in this OBC will still assist in providing for an increase in freight movements by separating the interaction of the Tees Valley rail line with the ECML at Darlington South Junction.

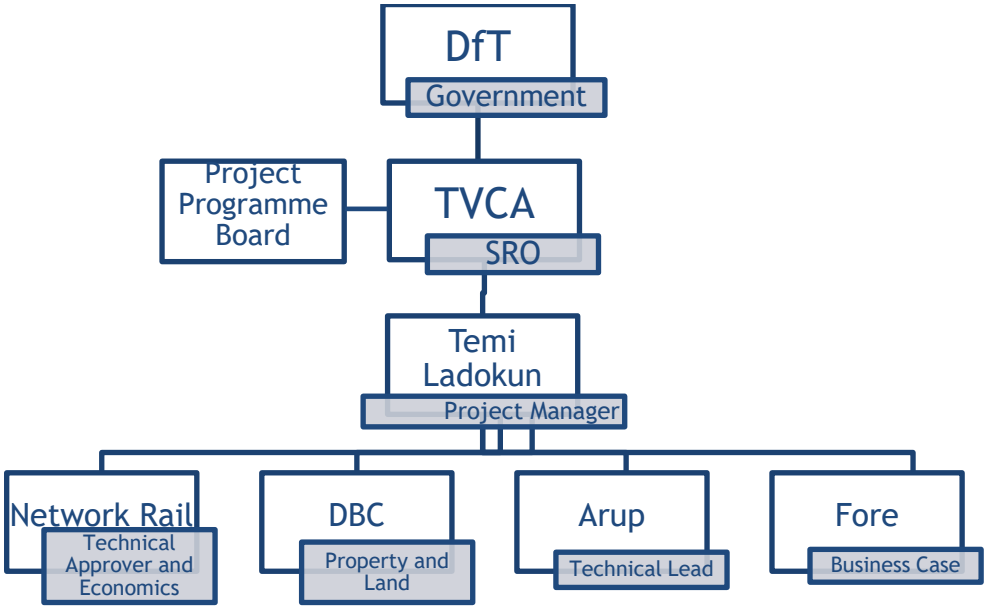
6.3 Governance, Organisation Structure and Roles

To date, TVCA has led the development of the scheme in partnership with Network Rail and this will continue until such time as this OBC is agreed. The current governance structure and key roles are illustrated in Figure 6.1.

Senior Responsible Owner (SRO) – the SRO has overall accountability for the delivery of the scheme ensuring the scheme remains focused on achieving its objectives. They have the authority to make decisions concerning the delivery of the scheme within a certain delegation.

The SRO is the TVCA Investment Director, Alison Fellows, who reports directly to the Tees Valley Management Group within the TVCA governance structure, and then on to the Tees Valley Combined Authority Transport Committee and Cabinet.

Figure 6.1: Current Governance Structure and Roles



Project Manager – the Project Manager leads and manages the project team with the authority and responsibility to run the project on a day-to-day basis. A Project Manager was recruited in 2019 through an open recruitment process and is directly employed by TVCA.

Temi Ladokun is the current Project Manager for the scheme – a Chartered Engineer with over 10 years' experience specialising in project management and supervision of large multi-disciplinary teams delivering engineering projects.

Programme Board – a Darlington Station Programme Board was set up to manage the delivery and production of the OBC and supporting workstreams for the scheme. The Board is chaired by the Tees Valley Mayor, currently meets on a quarterly cycle and comprises senior level representation from the following:

- DfT;
- Network Rail;
- TVCA;
- DBC;
- TfN; and
- LNER.

The agreed terms of reference for the Programme Board include the following strategic purpose for the Board:

"Oversee the development and delivery of the Project, with a collaborative, new and innovative approach to development and delivery of an Enhancement Scheme for the rail network. The Project will create a Station growth hub that will transform local, regional and national rail services in the Tees Valley. The Project includes plans for new commercial, residential and retail developments that will make the most of the advantages unlocked by investment in the Station's infrastructure. Investment will ensure fast and frequent direct trains to London, Edinburgh, the north and the wider Tees Valley – stimulating economic growth, and ensuring that the Tees Valley is ready for NPR and HS2."

The Programme Board, via the SRO and/or the Project Manager, reports progress against milestones, as required, to:

- DfT;
- TVCA Transport Committee and Cabinet;
- Tees Valley Transport Advisory Group;
- Local Authority Cabinets/Executive Groups; and
- TfN.

The Programme Board receives progress and project exception reports from, and gives direction to, the Project Manager. The Board ensures the timely set up and key deliverables from the technical support teams involved with the scheme, directing the commissioning of the technical work necessary. The Board also provides overview of the risk register and ensures effective communications are implemented.

The Project Manager convenes fortnightly progress meetings of the technical support teams to monitor product delivery against the agreed programme and to identify any significant issues that require escalation, as well as monthly working group meetings of officers of the organisations represented at the Programme Board.

From the point that the OBC is accepted and the scheme enters the RNEP, it is proposed that the existing North of England Programme Board would be a suitable body for the oversight of the development and delivery of the operational railway and station enhancements elements of the preferred option. The Programme Board is held every eight weeks with a supporting Programme Delivery Group (PDG) every four weeks. Progress updates will be provided by the Project Manager identifying key

issues affecting the project and key decisions to be made, firstly to the PDG and then onward to the Programme Board.

The ECML Programme Board and associated PDG would also be kept informed of progress and issues. Both Programme Boards are chaired by the DfT and contain cross-industry representation. Additionally, progress updates will be reported to Route Investment Review Group (RIRG).

The interface with the public realm and MSCP elements of the preferred option is proposed to be managed through the retention of the current Programme Board specifically for Darlington. The Programme Board would continue to be chaired by the Tees Valley Mayor and, in essence, this will provide for a co-client relationship in the next stage of works between the two principal funding parties (DfT and TVCA).

The responsibilities of the Programme Board going forward would include:

- Strategic direction;
- Business case preparation;
- Funding strategy;
- Co-ordination across the different elements of the preferred option, but also with other transport interventions across the City Region; and
- Stakeholder engagement.

The Programme Board would also have the authority to commission any further technical work as necessary and will liaise with other stakeholders with regard to the progress in relation to their interests.

Infrastructure Projects is the national infrastructure delivery division of Network Rail and is responsible for the delivery of all major infrastructure delivery works. This includes works to increase the capacity of the network (enhancements) and renewal works.

By having Infrastructure Projects as its main delivery arm, Network Rail ensures that large, complex and high risk projects are delivered by a competent deliverer. It balances the appropriate level of risk control and project complexity with cost effectiveness by allowing internal resources and systems to be used in the most productive and efficient manner. In addition, with Infrastructure Projects being the technical authority for Network Rail on cost planning, commercial strategy and delivery, it is able to provide expert service, set policy and provide assurance and governance on capital delivery for the organisation.

6.4 Project Plan

A Project Plan has been developed for this OBC setting out all the key project tasks and their duration, the interdependencies between each of the tasks, and key milestones and gateways. Certain elements of the programme have a built-in tolerance/contingency to account for risks identified within the risk register which could have an impact upon the programme.

The current version of the project plan, included at Appendix J, includes all significant work activities, significant outputs and key decision points regardless of which organisation is leading the work and Network Rail governance milestones envisaged.

The current project plan envisages completion of the scheme by December 2024, but the Programme Board will seek opportunities to expedite the process where possible to meet this date.

Following submission of this OBC, TVCA is seeking confirmation of a funding allocation for the next stage of works through a "Decision to Design" which would allow progression towards a "Decision to Deliver" by the end of 2021 at the latest to maintain momentum towards the target completion date. A proportionate and efficient approach to the production of GRIP products will be taken at all stages, as has been done to date with the GRIP3 work.

The project plan is a 'live' document and will be reviewed and updated regularly to provide an accurate and integrated picture of progress and dependencies for the project. The Project Manager is responsible for ensuring the plan is reviewed and updated on a monthly basis. Any changes or risks to achieving key milestone dates are brought to the Programme Board's attention and discussed as part of the quarterly meeting cycle. All proposed revisions to the project plan are issued to the Programme Board for approval.

Collaborative planning has been adopted on the scheme to ensure key milestones are met and additional efficiencies identified and realised to assist with the RNEP objectives and targets being met.

A greater level of detail will be introduced into the project plan during next stage(s) of the GRIP process, as detailed design of the scheme progresses and as risk quantification and impacts change.

6.5 Assurance and Approvals Plan

Project assurance provides the basic framework of controls that ensure:

- The project is managed and controlled as directed by the SRO;
- Basic standards are being followed; and
- The project is well-managed.

To date, the development of the scheme has followed by the TAG transport appraisal process advocated by the DfT and elements of Network Rail's GRIP process in parallel.

The project assurance controls that have been utilised thus far include:

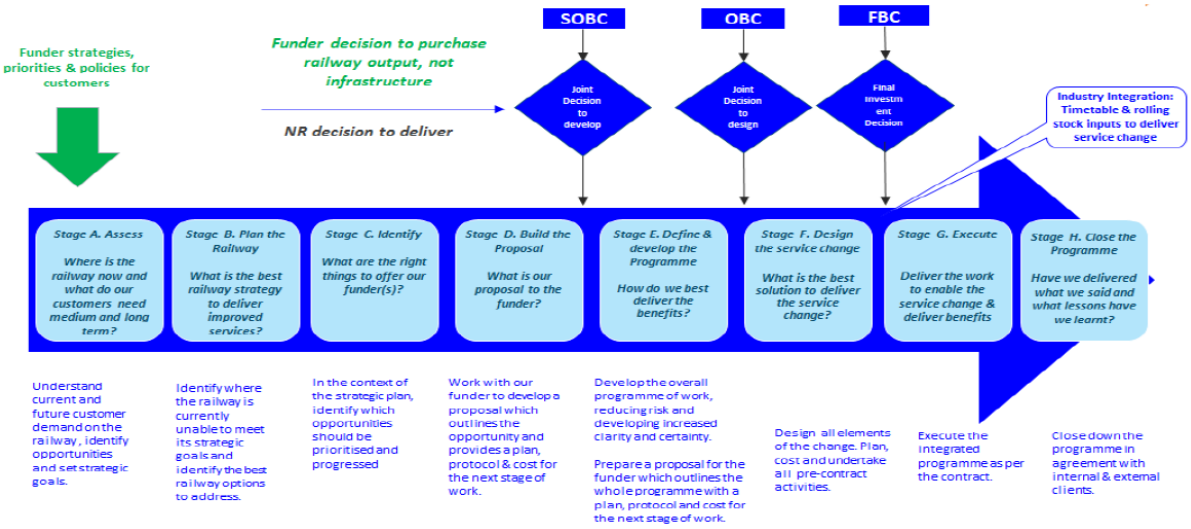
- Regular reporting (see below);
- Exception reporting and re-authorisation;
- Sign-off of GRIP products as they are produced; and
- Stage gate assessment reviews - evidence-based review that draws on documentation and activities that the project team have already produced.

Whilst some Network Rail GRIP project assurance controls have been utilised in the main on the scheme to date, it is recognised that responsibility for the assurance and approval of this OBC and thereafter the FBC, rests initially with the DfT, who will assess the technical content of the business cases against appropriate business case and transport appraisal guidance in order to confirm that the scheme represents value for money and is deliverable prior to acceptance into the RNEP.

This OBC is designed to facilitate a "Decision to Design" and for the project to proceed into the Design stage of the RNEP as shown below, with funding allocated to enable the next stage of development work and a potential update to this OBC at the appropriate time.

The investment decision framework that will apply from the acceptance of this OBC is shown in Figure 6.2.

Figure 6.2: Network Rail Investment Decision Framework



Network Rail has its own procedures for undertaking the development and construction of new infrastructure projects. These follow the GRIP process to provide an effective, consistent and repeatable standard by which to manage projects across the organisation. This minimises variation and ensures delivery to the desired standard, on time and on budget.

The GRIP describes how Network Rail manages and controls projects that enhance or renew the national rail network. It forms part of the project, programme and portfolio (P3M) framework. Network Rail has developed this approach to managing projects in order to minimise and mitigate the risks associated with delivering projects that enhance or renew the operational railway and projects in a high street environment. Level of Control (LoC) is used by all project delivery organisations to determine the scale of management control appropriate to the project.

For Network Rail delivered projects, it is standard practice to hold a full Stage Gate Review at the end of every GRIP Stage.

As part of Network Rail's internal assurance processes, there are regular reviews to assess process compliance. This is supplemented by an independent Project Assurance Review (PAR) carried out by Network Rail's national programme management team - these are independent Network Rail assessors to review readiness status for next stage of programme/project.

Given the complexity of this scheme, it is expected that it will be included in Network Rail's National Project Assurance Review (PAR) Programme. It should be noted that the PAR has been implemented with the agreement of the DfT's Infrastructure Projects Authority and regular monitoring reports are submitted to the DfT.

Before undertaking any proposed changes to the rail network, Network Rail must follow the Network Change consultation process. This is a formal process which allows a proposer to seek agreement from all affected parties that the change may go ahead, and to agree what compensation (if any) will be paid to cover the impact of the change.

Similarly, the Station Change procedure is for when a development entails changes to a station lease area, physical or operational changes to a station, or changes that affect the content or drafting of Station Access Conditions and Annexes. This is a procedure governed by the regulated 'station access conditions' for each station. At franchised stations, the conditions are part of the station leases granted by Network Rail, and in the access arrangements between the train operator tenant and other train operators who use the station. Given the nature of this scheme, the regulatory requirements will also need to be satisfied by making a Station Change Proposal, securing approval of all relevant parties and registering the approved change with the ORR.

Although the high level assurance principles and the necessary approvals will need to follow Network Rail's processes as a minimum, some elements of the scheme will need to comply with TVCA's agreed Assurance Framework, given the different funding contributions.

This framework is applied rigorously and requires (inter alia) a clear project governance structure and details how all stages through to project development, evaluation and approval will be applied, monitored and approved. It also requires independent external evaluation and assurance on significant schemes such as this one.

Assurance is provided through TVCA peer reviews staffed by the promoter and delivery personnel either from within the project or from a peer project. Underlying this are a number of assurance activities conducted by both TVCA and the suppliers, including activities such as business case reviews, risk reviews and estimate validation.

The number and timing of reviews are established based on the importance and complexity of the project. A number of gateways are required to be passed to provide evidence that the project is deemed fit to proceed. The output from these gateways are recorded and signed off by authorised individuals. Gateways are typically staffed by a combination of TVCA staff and consultant experts (both from within, and independent of, the project team).

6.6 Communications and Engagement

Effective stakeholder communication and engagement is vital for the success of a scheme such as the Darlington Station improvements. It creates stronger working relationships and increases the understanding of the scheme, with the overall objective of increasing scheme support and buy-in.

The Strategic Case set out the key stakeholders and their identified needs to date. Building on this, a Consultation and Engagement Strategy has been developed for this OBC and the latest version is included at Appendix K. The Programme Board is responsible for ensuring this strategy is implemented.

The aims of the strategy are as follows:

- Making available to interested parties, information on the need and impact of the scheme;
- Giving the public and stakeholders an opportunity to express their views on the option(s) under consideration and provide a feedback loop;
- Outlining the sustainable option(s) for consideration and the likely consequences of the scheme; and
- Providing a programme for future stakeholder engagement and public consultation,

all of which should ensure the consistent and structured delivery of messages to all key stakeholders throughout the lifecycle of the scheme. This is to ensure that:

- Customers and stakeholders feel informed about the scheme and how it may impact them;
- Customers and stakeholders feel they have had the opportunity to share their views about the scheme; and
- Customers are informed of the benefits the scheme will have on the local area.

The document is to be updated at each GRIP stage and at other key points during the project lifecycle, being treated as a 'live' document and additional information added when applicable, including the timings and considerations for external communications for some consideration of future GRIP stages.

A Stakeholder and Customer Management Plan is a key component of the GRIP process. It will identify key stakeholders and customers and evaluate their respective

influence and requirements. Stakeholder engagement is a fundamental part of how Network Rail seeks to continuously improve its business performance and its network licence contains a stakeholder engagement duty which, requires, to the greatest extent reasonably practicable, that Network Rail treats its stakeholders in ways appropriate to their reasonable requirements.

The network licence also requires Network Rail to publish information on the principles and procedures to be adopted when dealing with stakeholders to comply with this duty. This requirement has been discharged through the publication of a Stakeholder Relations Code of Practice – an overarching framework that sets rules and expectations of engagement.

Eight key principles are set out, and the minimum requirements that Network Rail expects will be followed, to demonstrate adherence to the code of practice, are also included in the document. However, mindful of the broader aims of devolution, Network Rail recognises that it is more important that those who manage stakeholder relationships at the appropriate local, regional or national level determine how best to apply such principles, in order to treat stakeholders in ways appropriate to their needs. This supports the approach taken with the joint development of a stakeholder management plan for this scheme.

TOCs and FOCs will be kept informed of general progress via the North of England and ECML Programme Boards and RIRG and the Network Change and Station Change procedures described previously will need to be followed, providing TOCs and FOCs with a formal consultation role.

It is the sponsoring party's responsibility to work through any issues raised during the consultation process so there are no outstanding objections. If this means changing the Network Change or Station Change proposal, this must be formally advised to all consultees, who must be given adequate opportunity to consider the revision and provide any comments, rejections or acceptances.

Issues specific to their operations will be discussed directly with the relevant operator on an ad hoc basis as required during the next stage of scheme development.

6.7 Programme/Project Reporting

To date, the progress of the scheme and in particular the progress of the current deliverables has been reported by Network Rail and the consultant(s) to the Project Manager and thereafter the Programme Board, in a quarterly highlight report.

A summary of other reporting formats and frequencies adopted to date is shown in Table 6.1.

Table 6.1: Regular Reporting Formats and Frequency

Control Area	Report Description	Frequency	Co-ordinated By
Progress (product delivery) against plan/programme	Highlight Report / Working Group & Progress Meeting minutes	Quarterly / Monthly / Fortnightly	Project Manager
Risks	Risk Register	Monthly	Project Manager
Issues	Issues Log / Progress Meeting minutes	Monthly	Project Manager
Change control	Change Log	Monthly	Project Manager
Costs and budgets	Monthly finance returns / Monthly Management Reports	Monthly	Project Manager
Look ahead	Highlight Report / Working Group & Progress Meeting Minutes	Quarterly / Monthly / Fortnightly	Project Manager

Both the project management and reporting arrangements are subject to active and regular review to ensure they are working as effectively as possible. The procedures used are based on good practice, and it is anticipated that they, or a variation of them, will be adopted as the scheme moves forward.

Following acceptance into the RNEP, the operational railway and station enhancements elements of the scheme will be run in line with the GRIP process and will follow standard Network Rail reporting processes. As a minimum, Network Rail reports on projects/programmes on a four weekly basis - sometimes weekly dependent on urgency. Each project is categorised reflecting the complexity of the scheme. Typical reports are as follows:

- Network Rail costs;
- Funding drawdown;
- Risk;
- Finance;
- People;
- Safety;

- Schedule;
- Current progress against milestones;
- Earned value, if applicable; and
- Contract status.

For schemes of significant value/significance, this is supplemented by Monthly/ Quarterly Reviews with the Route/Regional Managing Director.

The Infrastructure Projects part of Network Rail uses the P3M3 (Portfolio, Programme and Project Management Maturity Model) methodology as a management maturity model to assess how it delivers its projects, programmes and portfolio across the organisation.

Network Rail uses the governance process defined by the GRIP and management of LoC standard to allocate enhancements capital projects. The LoC process provides a risk-based assessment and guidance on the effort and detail required for planning, reporting and controlling projects and ultimately dictates the delivery organisation. The assessment takes account of 5 project considerations (in regard to novelty, technology and design, complexity, pace and operational impact), and 4 Levels, which ultimately derive an overall project assessment score from LoC 1 (high) to LoC 4 (low).

Reporting of progress against milestones to the DfT will be via quarterly Project Assurance Snapshot.

6.8 Risk Management Strategy

To facilitate effective risk management on the scheme, a Risk Register has been produced as part of the QRA process, and is included at Appendix L. This is supported by a programme-level risk register that is maintained by the Project Manager and is the means of recording risk information and monitoring risk exposure at this time. It not only records all identified risks and their associated assessments, but also includes necessary risk control plans and responsibilities, as well as the status of all risks. It has been developed through a collaborative process at suitable times during the development of the scheme to date.

Risk identification to date has been undertaken with key stakeholders and the technical support teams across a range of risk categories (for example, technical, operational, safety, legal, commercial and financial). Risks have been assessed to determine the probability and consequences of each risk, determining the relative

level of risk, and whether risks should be monitored and controlled or whether a response or action is required.

Reporting of the key risks has been undertaken at Progress and Working Group Meetings each month and at the quarterly Programme Board meetings as necessary – the most recent review of the Risk Register was undertaken in January 2020 in line with the preparation of this OBC. Updates will be given on key outstanding risks where the risk type/size/response has changed.

The strategic and programme risks were excluded from the quantitative assessment undertaken, as the risks will be managed by the DfT and Network Rail respectively.

Typical Network Rail risk management activities include:

- Formal risk identification and monitoring of risks (both threat and opportunity), and suitable mitigation plans and review meetings to manage those risks - this will necessitate identification and quantification of risks;

- It is essential that the relevant risk ownership between client, contractor and infrastructure operator (Network Rail) are clearly understood, documented and agreed at the outset of any next phase requiring funding – the specifics of exactly how the risk transfer is allocated during the contract can then be established; and

- It is also relevant to note that Network Rail has a corporate risk management strategy and system for managing project/programme risks (Active Risk Manager) – this is reviewed and assessed on a four weekly basis and will also be visible to senior regional stakeholders should the risk exposure become significant.

Network Rail Infrastructure Projects uses an Enterprise Risk Model, given that because of the size and scale of the infrastructure portfolio, the key strategic risk is directly linked to its ability to deliver projects on time and to budget. Every quarter, as part of the Business Assurance Committee, Infrastructure Projects' strategic risks are reviewed and decisions taken regarding escalation, delegation and retirement of risks – this is informed by a working level group which is chaired by the Head of Risk and Value Management.

The Designated Project Engineer and Project Manager are responsible for reviewing the requirement and implementation of the Common Safety Method on Risk Evaluation and Assessment (CSMRA) process.

Risks relating to construction works that are relevant to the operational rail network- either during design, construction or during operation, maintenance or deconstruction are progressed through the CSMRA hazard log. Risks relating to construction works that are relevant to areas other than the operational railway

network are progressed through the CDM issues log. The Safe by Design process is applied to the hazard elimination and risk mitigation/control for all project phases.

Based on historical and recent benchmarks for the construction of similar projects, Network Rail recommends that once an indicative schedule for future phases can be declared, a quarterly QSRA (Quantitative Schedule Risk Analysis) is held to assess the likely impact of uncertainty on key milestones and project completion date.

It is recommended that this approach is carried out as part of a Collaborative Planning Workshop with all relevant stakeholders. Key inputs to consider include development phase duration, design phase duration, funding approvals, procurement timescales, possession planning, timetabling, Network Change, construction phase duration, with the inclusion of adequate float to allow trial running of trains before formal Entry into Service.

6.9 Benefits Realisation Plan

An outline Benefits Realisation Plan (BRP) has been produced as part of this OBC to begin the process of identifying, tracking and comparing the various benefits expected to be delivered. The scheme objectives and a logic mapping process have been used to develop the "desired outputs, outcomes and impacts" of the scheme. These desired outputs, outcomes and impacts are the actual benefits that are expected to be derived from the scheme and are directly linked to the original set of objectives:

- Desired outputs – tangible effects that are funded and result from the scheme;
- Desired outcomes – what happens as a result of the outputs; and
- Desired impacts – the final impacts brought about by the scheme in the short, medium and long term as a result of the outputs and outcomes.

The scheme objectives and desired outputs/outcomes/impacts are summarised in Table 6.2 and provided the starting point for the development of the BRP.

Given the scheme objectives identified, the outline BRP focuses upon the stimulus to jobs/economic activity and the impact on journey times. To determine whether the scheme benefits are being realised, the desired outputs, outcomes and impacts have been converted into measurable indicators of scheme benefits, and are reported in the BRP, that is closely aligned to the Monitoring and Evaluation Plan.

The outline BRP is included at Appendix M. Responsibility for the BRP and the associated monitoring and evaluation sits with the Programme Board.

Table 6.2: Scheme Objectives, Desired Outputs, Outcomes and Impacts

Scheme Objective	Desired Outputs	Desired Outcomes	Desired Impacts
Support the economic growth objectives of the Northern Powerhouse and the Tees Valley City Region	Additional rail network capacity	Additional rail services and frequencies	Increase in jobs
Improve east-west passenger and freight connectivity to the City Region Strategic Centres and Enterprise Zone sites	Improved rail network reliability and resilience	Improved rail journey times and reliability	Increase in GVA
Support sustainable local development	Improvements to passenger facilities	Enhanced passenger experience	Increase in labour market catchments areas
Keep goods and people moving smoothly and safely	New public realm	Increased commercial opportunities	Improved journey quality
Grow and upgrade the rail network to better serve passengers and freight			Reduced Schedule 8 payments
Provide better value for money from the rail network			Mode shift from road to rail
Ensure that the East Coast, TransPennine, Durham Coast and Tees Valley rail networks can cater for expected future growth in both passenger and freight demand			Delivery of housing sites and Local Plans
Ensure that Tees Valley's principal rail gateways are ready for major projects such as HS2 and NPR			
Deliver high quality, integrated local services			

Scheme Objective	Desired Outputs	Desired Outcomes	Desired Impacts
Provide an improved gateway to Darlington and the Tees Valley Provide a station and surrounding area that are accessible and safe for everyone Improve access to employment opportunities through low carbon transport choices			

6.10 Monitoring and Evaluation Plan

The scheme will be subject to a programme of before and after monitoring and evaluation. Monitoring and evaluation are distinct activities - monitoring asks whether delivery is proceeding as planned and evaluation asks whether the intervention has achieved its desired objectives.

The outline Monitoring and Evaluation Plan, include at Appendix N, sets out the activities that will be undertaken to demonstrate the extent to which scheme objectives were met, monitor performance of the scheme and ensure that any potential issues post implementation are identified and addressed.

The types of measures that may be monitored (covering inputs, outputs, outcomes and impacts) include:

- Scheme build;
- Delivered scheme;
- Costs;
- Rail travel demand;
- Rail revenue;
- Absolute journey times and reliability of journey times on the ECML;
- Delay payments;
- Economic impacts;
- Mode shift; and
- Customer satisfaction.

Further monitoring and reporting will also be conducted by Network Rail, the form of which will be dependent on elements of the scheme it is remitted to develop or deliver. In all cases this will undertaken in accordance with Network Rail's well established processes for project delivery and performance monitoring.

Consideration would also be given to wider contextual factors that are not related to the scheme but necessary to consider.

The outline plan will be updated as part of the FBC in light of the continued development of the scheme.

Through an evaluation of the scheme, DfT, Network Rail and TVCA will seek to:

- Understand whether and how the scheme's main objectives have been achieved, exceeded or not reached;
- Provide transferable evidence that may be used to inform future decision making on similar transport schemes; and
- Improve the efficiency and effectiveness in the delivery of future schemes based on the lessons learnt from this scheme.

The SRO will take overall responsibility for the monitoring and evaluation of the scheme, with the Project Manager taking responsibility for the delivery and programming of the evaluation programme. This may include the procurement of specialist consultancy support and survey contractors to evaluate, report, collect and collate the necessary information, respectively.

7 Summary

This document and its series of appendices comprise the OBC for major improvements to Darlington Station, one of the Tees Valley's key rail gateways and strategically located on the ECML.

The scheme has a strong strategic fit and the economic analysis of the preferred option provides confidence that a BCR of above 2.0 is generated based on the estimate of the key benefits undertaken to date, representing High value for money.

Beyond the economic analysis, the Darlington Station scheme will also:

- Relieve the existing capacity constraints at Darlington station, which Network Rail has identified will put at risk the full delivery of the train services being considered for this section of the ECML in the future;
- Improve reliability for all train services using Darlington station, reducing in real terms the associated delay payments currently being made, and which will only increase in the future, as a result of infrastructure constraints;
- Improve the resilience of the national rail network and therefore reduce the negative impact of unplanned events on rail users;
- Reduce journey times for local people and providing the potential of additional local train services and stations, thereby unlocking development potential in the City Region and making the Tees Valley more attractive to inward investors and visitors;
- Improve access to some of the Tees Valley's Enterprise Zone sites, the STDC site, the expanding port facilities along the River Tees and Teesside International Airport;
- Support the economic growth objectives of the Northern Powerhouse and the Tees Valley City Region;
- Provide a suitable rail gateway to the town of Darlington, supporting its housing and economic growth ambitions, as well as the wider Tees Valley City Region;
- Support the regeneration proposals around Darlington Station, building on the already successful opening of Business Central, the Centre for Process Innovation, Teesside University and the refurbishment of Darlington Hippodrome, all within ten minutes' walk of the station; and
- Help realise the full benefits of HS2 and NPR, potentially allowing the scheme to be included within an early package of works for NPR in the North.

The base cost estimate for the preferred option is £75.71 million, whilst the estimated outturn cost is £95.96 million, with the latter figure also including an appropriate allowance for risk (note this is the total outturn scheme cost and does not take account of the TVCA contribution of £25 million). The costs have been derived in a robust way using information from current and recently completed projects, and the works required have been quantified based on the current scheme designs.

Several potential funding routes have been considered for the scheme, with the most appropriate being the RNEP and the TVCA Investment Plan.

A sound governance structure has been in place throughout the life of the scheme, and Network Rail has been closely involved in its development since inception, assisting with the economic analysis and some elements of technical assurance of the GRIP products prepared in support of this business case. It is suggested that this governance structure is retained for the next stage of scheme development, through the Darlington Station Programme Board, chaired by the Tees Valley Mayor. In essence, this will provide for a co-client relationship in the next stage of works between the two funding parties.

A project plan has been produced setting out all the key project tasks and their duration, the interdependencies between each of the tasks, and critical milestones and gateways. This plan shows the completion of the scheme in December 2024, in time for the 2025 celebrations of the 200th anniversary of the opening of the Darlington to Stockton railway.

As this submission clearly demonstrates, there is a strong and robust case for investment in Darlington Station. It is therefore recommended that the scheme is included in the RNEP, so that the many benefits that it will deliver across the Tees Valley City Region and the wider national rail network, can be realised as soon as possible. Confirmation of a future funding allocation, subject to continued value for money, would also allow the early release of the £25 million contribution to the scheme committed by TVCA.

Appendix A

Darlington 2025 Masterplan Brochure

Appendix B

Darlington Connectivity Capacity Analysis

Appendix C

Train Capacity Planning Technical Note

Appendix D

Technical Optioneering Workshop File Note

Appendix E

Letter from Transport for the North

Appendix F

Preferred Option Site Plan

Appendix G

East Coast Route Study Investment Choices Phased Timeline

Appendix H

Economic Analysis Technical Note

Appendix I

Cost Estimate Report

Appendix J

Project Plan

Appendix K

Consultation and Engagement Strategy

Appendix L

Risk Register

Appendix M

Benefits Realisation Plan

Appendix N

Monitoring and Evaluation Plan

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