

Hartlepool Borough Council
Elwick By-Pass, Overbridge and Compact Grade Separated Junction

Strategic Outline Business Case

20 July 2016
Version 0.1
Issue







Document Control

Client: Hartlepool Borough Council
Project Title: Elwick By-Pass, Overbridge and Compact Grade Separated Junction
Job Number: 2085-02
Report Title: Strategic Outline Business Case

Date	Version	Status	Author	Checked	Approved
20/07/2016	0.1	Issue	Emma Roberts	Jonathan Spruce	Jonathan Spruce

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1 Introduction

This document presents the Strategic Outline Business Case (SOBC) for the Elwick Bypass, Overbridge and Compact Grade Separated Junction. The purpose of the SOBC is to:

- Define the scope of the project and its outputs/benefits;
- Make the case for change;
- Confirm the strategic fit with national, regional and local objectives;
- Outline options;
- Confirm governance arrangements;
- Identify stakeholders.

1.1 Overview

Through strategies such as the Tees Valley Strategic Economic Plan and the Hartlepool Economic Regeneration Strategy, and supported by initiatives including the Tees Valley Enterprise Zone scheme, Hartlepool has been identified as playing a significant role in attracting investment in a number of growth sectors.

These growth sectors include process engineering, offshore/subsea engineering, the energy sector, including nuclear, high value-added engineering, and knowledge intensive business services. Hartlepool will also play a key part in supporting growth and expansion of the existing small and medium sized enterprise (SME) base from engineering and advanced manufacturing, energy and process industry to the digital and creative sectors.

Hartlepool will also continue to see growth in its visitor economy with further development associated with the Marina, in particular the opening of the National Museum of the Royal Navy, and is experiencing expansion of its further education facilities, including a new campus for Cleveland College of Art and Design.

Economic growth will be accompanied by increased housing growth which must be in locations attractive to both developers and future residents. The emerging Hartlepool Local Plan has identified the need to deliver an additional 2,100 units between 2016 and 2031, over and above the 3,900 housing units that already have planning permission.

This scheme will support these growth ambitions and provide a new strategic route for road traffic from Hartlepool to the A19. This will relieve pressure on the existing A179 and A689 routes from Hartlepool to the A19 and overcome safety concerns with regards to the

existing at-grade junctions. The project will provide direct benefits to the residents of Elwick Village through significantly reducing traffic through the village, helping to make it a safer environment. The scheme will also provide direct benefits for existing and new residents in the western areas of Hartlepool and have indirect benefits for residents and businesses throughout Hartlepool through reduced traffic congestion and reduced journey times. The scheme will facilitate full development of the High Tunstall Farm/East of Naisberry Farm site, and relieve pressure on existing access points, particularly onto the A689, A179 and A19.

The scheme will also support the aspirations of Highways England to turn the A19 into an 'Expressway' between the A179 and A689 junctions with the development of a grade separated junction at Elwick and the associated closure of existing gaps and accesses on the A19.

1.2 Structure of the Document

The remainder of this document is structured as follows:

- Chapter 2: The Strategic Case where we present the rationale for undertaking the scheme by demonstrating the need for change and how the investment furthers the aims and objectives of not only Hartlepool Borough Council (HBC) but also the Tees Valley Combined Authority (TVCA);
- Chapter 3: The Economic Case where we consider the benefits of the scheme and its value-for- money;
- Chapter 4: The Financial Case where we explain how the scheme costs have been derived and the funding options;
- Chapter 5: The Commercial Case where we consider the procurement options and the output based specification requirements; and
- Chapter 6: The Management Case where we highlight how the project will be managed, the key risks and how these will be minimised.

This SOBC has been prepared to set out the need for intervention (the case for change) and how this will further national, regional and local objectives (the strategic fit). It also provides suggested or preferred ways forward and presents the evidence for pursuing these further.

2 Strategic Case

This chapter of the SOBC clearly articulates the need for intervention, the case for change and how investment will facilitate the economic growth priorities of both the Tees Valley Combined Authority (TVCA) and the Tees Valley Local Enterprise Partnership (Tees Valley Unlimited (TVU)). It also articulates how the aims and objectives of the scheme will enable Hartlepool Borough Council (HBC), as project sponsor, to fulfil its own growth ambitions, which strengthen and support the principles of the refreshed Tees Valley Strategic Economic Plan (SEP) and the Hartlepool Economic Regeneration Strategy.

The Strategic Case defines policy alignment, examines the existing characteristics of the road network and associated influence on network operation and identifies a series of prioritised investment objectives to address those factors which act as inhibitors to growth.

2.1 Business Strategy

The SOBC has been prepared on behalf of HBC in consultation with Highways England. Table 2.1 provides a summary of the relevant national, regional and city regional policies considered applicable to the scheme, with further detail of each policy lever provided later within this section.

Table 2.1: Policy Fit

Document		Summary of Fit
1	Local Growth White Paper/ Local Growth Fund (2010)	The scheme seeks to deliver the economic growth aspirations by supporting housing growth and promoting economic development.
2	National Planning Policy Framework (2012)	The scheme seeks to address barriers to development opening up housing sites which are currently subject to Highways England Holding Recommendations.
3	Northern Powerhouse: One Agenda, One Economy, One North- A report on the northern transport strategy (2015) and Spring Update Report (March 2016)	The strategy is about using transport to aid change in future patterns of land use and economic growth, with the goal of creating a single economy in the North. The scheme will contribute to this

		ambition in a local sense by providing Hartlepool with improved/safer accessibility of the wider Northern economy and allowing housing growth to support the local economy.
4	Northern Powerhouse Independent Economic Review (2016)	The Northern Powerhouse Independent Economic Review identifies key capabilities across the North which could provide the foundations for closing a major gap in productivity, generating new jobs and enhancing global competitiveness. The evidence presented points to a strong link between agglomeration economies and connectivity. The report notes the North is fragmented by poor transport links between key settlements meaning the economy as a whole is failing to gain the agglomeration effects which would help grow its productivity and promote a higher employment rate.
5	Highways England Strategic Plan (2014)	The scheme will enhance the safety of the strategic network in line with the objectives of Highways England whilst supporting economic growth by opening up new areas for development.
6	Tees Valley SEP (2014) and Tees Valley SEP Refresh (2016)	The scheme is aligned with current SEP Priority 3 (Develop and Provide Infrastructure) and Priority 4 (Attract and Retain Wealth). It will also contribute to the priorities within the refreshed SEP such as supporting housing growth.

7	Tees Valley Statement of Transport Ambition/Strategic Transport Plan/Devolution Deal	The scheme is included within the refreshed Tees Valley Area Action Plan that will provide a prioritised programme of local highway improvements to facilitate housing and employment growth and to support our strategic priorities.
8	Hartlepool Local Transport Plan 3 (LTP3) (2011)	The scheme would contribute the LTP3 objectives by reducing congestion, removing constraints on development, and delivering a positive impact on quality of life for those living in Elwick village.
9	Hartlepool Local Plan (emerging)	The scheme will support the delivery of the Hartlepool Local Plan by allowing the development of land on the western side of Hartlepool as well as helping to achieve significant improvements within the Highway Network which the Local Plan seeks to achieve.
10.	Hartlepool Economic Regeneration Strategy 2011-2021	The scheme will help to improve business infrastructure and help to provide the right environment for future investment.

2.1.1 Government Objectives

1. Local Growth White Paper: Realising Every Place's Potential

The White Paper, published in 2010, sets out the Government's role in supporting locally driven growth, encouraging business investment and promoting economic development. As such, it sets out the Government's commitment to:

- Shift power to local communities and business, enabling places to tailor their approach to local circumstances;

- Promote efficient and dynamic markets, in particular in the supply of land, and provide real and significant incentives for places that go for growth;
- Support investment in places and people to tackle the barriers to growth.

The White Paper provides the context for Local Growth Deals which are partnerships between the Government and Local Enterprise Partnerships (LEPs), where the Government responds to the offers made by each LEP in pursuit of the shared objective of growth in order to allocate Local Growth Fund (LGF) resources. The Government and each of the LEPs have now negotiated Growth Deals on the basis of individual SEPs.

The scheme seeks to deliver the economic growth aspirations by supporting housing growth and promoting economic development in support of the Tees Valley SEP. It is anticipated that funding for the scheme could be forthcoming from the third round of the LGF for which the TVCA is currently preparing a programme bid.

2. National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published by the Department for Communities and Local Government (DCLG) in 2012. It sets out national planning policy for England, superseding the Planning Policy Guidance (PPG) and Planning Policy Statement (PPS) notes.

NPPF states that the purpose of the planning system is to contribute to achieving sustainable development. In effect, this means planning is required to perform the following three specific roles:

- An economic role, contributing to building a strong, responsive and competitive economy;
- A social role, supporting strong, vibrant and healthy communities;
- An environmental role, protecting and enhancing the natural, built and historic environment.

The NPPF sets out a presumption in favour of sustainable development. This effectively means that development proposals that accord with the development plan should be approved without delay. The NPPF sets out twelve core land-use planning principles that should be taken into account when making planning decisions, including:

“planning should... actively manage patterns of growth to make fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable”.

The NPPF makes particular reference to the following which is of relevance to the scheme proposals:

“Planning policies should recognise and seek to address potential barriers to investment, including a poor environment or any lack of infrastructure, services or housing;” and

“Contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure identifying and coordinating development requirements including the provision of infrastructure”

3. Northern Powerhouse: One Agenda, One Economy, One North

The Northern Powerhouse vision sets out a transport strategy that will maximise the economic potential of the North, securing inward investment and capitalising upon the unique strengths each of the northern cities is able to offer. Bringing together central and local government, national transport agencies and LEPs, the vision identifies the need for connectivity within and between the Northern City Regions to be transformed, improving journey times, capacity and resilience; enabling the North to achieve the critical mass needed for it to compete globally.

In the Spring Update Report (March 2016) the Vision was further developed with the report noting the investment in connecting the North’s towns and cities into a single economy is essential to creating a transformed, integrated Northern economy greater than the sum of its parts. The report also re-asserts that investment in the North’s transport networks is required to better connect the major urban centres and economic assets to market opportunities including talented staff, suppliers, collaborators and customers.

The improved access to the strategic road network the scheme will deliver is therefore aligned with this vision, given the onward connectivity the road network provides to other parts of the Tees Valley City Region and neighbouring economic centres.

4. Northern Powerhouse Independent Economic Review

The Northern Powerhouse Independent Economic Review, which was published on 30th June 2016, identifies key capabilities across the North which could provide the foundations for closing a major gap in productivity, generating new jobs and enhancing global competitiveness.

The evidence presented points to a strong link between agglomeration economies and connectivity and notes the North is fragmented by poor transport links between key settlements meaning the economy as a whole is failing to gain the agglomeration effects which would help grow its productivity. Better transport connectivity can help to promote

a higher employment rate, by improving access to centres of employment, and it can help to promote higher productivity, by improving the attractiveness of an area for investment, improving access to markets, increasing the pool of workers available to work in higher productivity urban locations, and increasing the effective scale of cities and the associated benefits of agglomeration.

The report highlights that transformational improvements to the North's transport connectivity are critical, both between and within cities. It also notes that global connectivity, for people and for goods, is also essential if the North's Smart Specialisation opportunities are to be realised fully. The report notes that economic growth will lead to increased demand for road travel across the North and accordingly, targeted investment in new road infrastructure will be warranted to enhance the reliability and resilience of road travel, reduce journey times and improve the connections offered by the North's road networks.

5. Highways England Strategic Plan

Highways England's ambition is to ensure our major roads are more dependable, durable and most importantly - are safe. The organisation seeks to make sure the strategic road network is:

- Free flowing - where routine delays are infrequent and journeys are reliable;
- Safe and serviceable - where no-one should be harmed when travelling or working;
- Accessible and integrated - so people are free to choose their mode of transport and can move safely across and alongside our roads.

They further aim to:

- Support economic growth with a modern and reliable road network that reduces delays, creates jobs, helps business and opens up new areas for development;
- Ensure our activities result in a long term and sustainable benefit to the environment.

The Highways England Strategic Plan sets out the main activities of the organisation and describes how it will go about delivering the Road Investment Strategy on behalf of central government. In particular, it sets out the concept of "Expressways" and notes that Highways England will begin to upgrade some of our most important major A roads to the new Expressway standard that encompasses:

- The encouragement of free-flowing traffic by modernising junctions;

- The provision of emergency refuge and maintenance areas;
- Use of advanced technology to detect and help clear incidents more quickly and get traffic moving again.

The Strategic Plan also sets out the concept of developing route strategies to assist in providing a more strategic and long-term approach to planning the network and the business. These strategies provide a clear indication of Highways England's priorities for the longer-term and seek to inform the investment plans of public and private sector partners.

2.1.2 Tees Valley Objectives

6. Tees Valley Strategic Economic Plan (SEP)

The current Tees Valley SEP was published in 2014 and complements the National Infrastructure Plan and the National Planning Policy Framework, including identification of priority areas for infrastructure provision and supporting growth of housing, ports, airports and high speed broadband. The key objectives and priorities within the SEP are:

1. Support Innovation and Sector Development

- Secure the transformation of Tees Valley into a Low Carbon High Value economy.
- Develop and nurture an innovation culture and positive environment for business growth.

2. Develop the workforce

- Secure improved skills levels to address future demand in growth sectors and in existing industries.

3. Develop and Provide Infrastructure

- Secure additional capacity on the East Coast Mainline rail route and improve rail services to major northern cities and within the Tees Valley.
- Improve our air, road, port, land and property infrastructure to enable economic growth.

4. Attract and Retain Wealth

- Create and retain wealth by developing the Tees Valley as a place to live in, work and visit.

The overarching principle within each of these objectives and priorities is to ensure that growth is sustainable and inclusive and attracts and retains wealth creation by developing the Tees Valley as a place to live, work and visit.

The SEP set out ambitious targets for growth in the Tees Valley, with a headline target being to achieve 25,000 net new jobs (a 10% increase) in the Tees Valley over the next decade, bringing with it over £1 billion of GVA benefits, closing the gap between national employment rates and matching the private sector employment rate in Manchester, Birmingham and Leeds. In order to deliver these jobs it will be important that housing development is supported to retain and attract residents who can then benefit from sustainable and inclusive economic growth.

The SEP is currently being refreshed to coincide with the establishment of the Tees Valley Combined Authority and the associated new powers and funding. The plan will set 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. It is being refreshed to ensure that it includes all of the latest priorities to improve, diversify and accelerate growth in the local economy to benefit businesses and residents and to contribute to the overarching objectives of creating new jobs and improving productivity.

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. These are: business growth; research, development and innovation; education, employment and skills; places; culture; and transport and infrastructure. There is also an overarching strategic theme - to develop a circular economy - which is now recognised as one of the EU's most important environmental and economic policies.

To date, 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 10 years. These are also set out in the Statement of Transport Ambition (see No. 5 below). In addition to the four strategic priorities, there are also ambitions to deliver road improvements, enhance passenger and freight rail services, upgrade Middlesbrough station and enhance bus provision.

In relation to the "Places" building block the refreshed SEP sets out the need to deliver additional housing to support economic growth, with a need for an estimated 20,000 new homes over the next 10 years.

7. Statement of Transport Ambition /Strategic Transport Plan/Devolution Deal

The Transport Ambition is the Tees Valley's long-term transport strategy. It provides the transport context for delivery of the Tees Valley Strategic Economic Plan from which the key priorities for transport and infrastructure investment across the Tees Valley have been developed. In summary these are:

- Implementation of the Darlington HS2 Growth Hub, which encompasses new platforms at Darlington rail station as part of a commercial redevelopment, delivering a 21st century rail gateway ready for HS2 and Northern Powerhouse Rail;
- An additional strategic road crossing of the River Tees, enhancing accesses to 11 Enterprise Zones and ensuring that the last section of the A19 expressway will meet the “mile per minute” objective for expressways;
- Improved east-west road connectivity to provide a high quality, resilient corridor along the A66 from the A1(M) to the international gateway at Teesport; and
- Electrification of the rail line from Northallerton to Middlesbrough/Teesport, delivering the required W12 gauge clearance on this critical freight route at the same time.

In combination these will deliver major economic benefits for the Tees Valley and wider North and will be supplemented by a range of other improvements across all modes of transport.

TVUs Statement of Transport Ambition will be revised and updated to form a new Tees Valley Combined Authority Strategic Transport Plan from Spring 2017. In addition to further developing the main strategic transport priorities above it will set the policy framework to support the following:

- Tees Valley Area Action Plan - development of a prioritised programme of local highway improvements to facilitate housing and employment growth and to support the strategic transport priorities;
- Tees Valley Rail Network - further enhancement of local rail services through active involvement in the new North East Rail Management Unit, to build on franchise improvements and recent TVU investment in station facilities;
- Tees Valley Bus Network - further network enhancement to build on the recent Tees Valley Bus Network Improvements (TVBNI) project - the Bus Services Bill will provide the opportunity to work with operators to develop the future network that is needed;
- Tees Valley Freight Network - development of a supporting freight strategy which will identify investment priorities to facilitate planned freight growth across the Tees Valley and beyond;
- Sustainable Transport - continued development of a complementary programme of cycling, walking and other sustainable transport measures to support economic growth as well as health and well-being.

The Devolution Deal signed in November 2015 allows for the transfer of powers for transport away from central government to the Tees Valley and includes the strategic schemes identified above which are deliverable in the next 10 years and are supported and endorsed by Transport for the North (TfN).

2.1.3 Hartlepool Objectives

8. Hartlepool Local Transport Plan 3

Local Transport Plan 3 (LTP3) sets out how the Borough can deliver a safe and sustainable transport system within Hartlepool. The vision for LTP3 is as follows:

“Hartlepool will have a high quality, integrated and safe transport system that supports continued economic growth and regeneration. We will seek to provide excellent access to key services and facilities for all, promote sustainable travel patterns of development and movement and minimise the adverse effect of traffic on local communities and the environment. The development of transport services and infrastructure will represent best value for money for users, operators and the council.”

The objectives for LTP3 are summarised as follows:

- Delivering sustainable economic growth;
- Reducing the impact of transport on the environment and tackling climate change;
- Safer and healthier travel;
- Improve equality of opportunity through access to services;
- Quality of Life.

As the A19 forms part of the strategic road network it is not under direct control of Hartlepool Borough Council. However, it is integral to economic development and the prosperity of Hartlepool and therefore HBC is committed to working closely with Highways England and Autolink (Design Build Finance and Operate (DBFO) operator), particularly where the need to improve long distance connectivity is concerned.

9. Hartlepool Local Plan

The 2006 Hartlepool Local Plan is the current statutory development plan for Hartlepool Borough. HBC had been through the process of producing a new Local Plan; however, the decision was taken to withdraw the Local Plan in November 2013. Whilst a new Local Plan is being developed, a Policy Framework has been produced to show where it is considered that saved policies from the 2006 Hartlepool Local Plan are in conformity with the NPPF.

All saved transport policies from the 2006 Local Plan are fully or partially consistent with the NPPF. The only issue with regards to partially consistent policies is the references made in the policies to employment allocations.

The first stage of the production of the new Local Plan for Hartlepool Borough, the Issues and Options Consultation, was undertaken between May 2014 and July 2014. The Preferred Options Local Plan document is now open for consultation until the end of July 2016. The document takes account of consultation responses from the Issues and Options stage and also other key strategies and programmes. The document also reflects national policy objectives including recent changes towards encouraging sustainable growth. In particular the Preferred Options Local Plan document seeks to build on the unique issues and opportunities facing the Borough, including expanding the town's economy, providing a range and choice of housing and improving and enhancing its natural and heritage assets.

The Preferred Options Local Plan document notes that although Hartlepool is served by a good range of housing provision, there is also a need to provide new homes to meet the demands of growth in household formation and to support economic growth. Sites are available within the existing built up area of the town to meet some of this demand, however, there is a need for some expansion on greenfield land to meet these requirements and to support the economic growth ambitions of the Borough.

In the preparation of this Preferred Options Local Plan document, HBC has conducted research into future housing need in the Borough through the production of the Strategic Housing Land Availability Assessment (SHLAA) and also the Strategic Housing Market Assessment (SHMA) which have acted as the basis for the development of providing sites to meet the housing need over the plan period. This tasks HBC to deliver approximately 6,000 units between 2016 and 2031. Of these approximately 3,900 have current planning permission and therefore it is necessary for the plan to allocate sites for the remainder.

To ensure sustainable growth to 2031, the development of Hartlepool will be based on a strategy of balanced urban growth with most expansion being concentrated in areas adjoining the existing built up area and adjacent to areas of strong economic growth but ensuring growth occurs in a controlled way and is delivered alongside infrastructure improvements which allow Hartlepool to grow in sustainable manner.

The Local Plan document also specifically references the need to deliver a new bypass to the north of Elwick Village and a new grade separated junction at the A19 to create a "third" main access point into Hartlepool to support the growth of the Borough over the plan period. It is also referred to in the Local Infrastructure Plan which is part of the Local Plan evidence base. The Local Infrastructure Plan includes specific schemes required to deliver local plan policies and proposals. It is this scheme that is the subject of this SOBC.

10. Hartlepool Economic Regeneration Strategy

Hartlepool's Economic Regeneration Strategy (ERS) for the period 2011-2021 sets out a vision of how to achieve a shared ambition of moving the Borough towards a more inclusive, prosperous and resilient economy. One of the main objectives of the strategy is to attract new investment and develop major programmes to regenerate the area and improve connectivity. The scheme will help to improve business infrastructure and help to provide the right environment for future investment.

2.2 Problems and Issues

2.2.1 Existing Situation

The two existing junctions on the A19 trunk road west of Elwick village are located between the grade separated junctions with the A689 near Wolviston and Wynyard to the south and the A179 near Sheraton to the north. This is a rural area to the west of Hartlepool within the boundary of HBC. Between the A689 and A179 junctions, the A19 is a Dual 2 lane All Purpose (D2AP) road having at-grade priority junctions with two minor roads providing access to Elwick, one providing access to Trimdon and one providing access to Dalton Piercy and several direct accesses to properties and farms all incorporating central reserve gaps. A minor road links Elwick with the western part of Hartlepool.

The A19 is lit throughout from just south of the Dalton Piercy at-grade junction to the A179 grade separated junction. The safety barrier in the central reserve is of steel construction.

The existing at-grade junction of the A19 with Coal Lane consists of a right/left staggered junction south west of Elwick village and includes deceleration and acceleration lanes for the side roads. The minor road west of the A19 provides access to individual properties and farms and to Trimdon village. The minor road east of the A19 provides access to Elwick village. The central reserve gaps allow right turns from the A19 in both directions to the side roads and from the side roads to the A19.

The existing at-grade junction of the A19 with North Lane consists of a priority junction north west of Elwick village and includes deceleration and acceleration lanes for the side road. North Lane east of the A19 provides access to Elwick village. The central reserve gap allows right turns from the A19 northbound to North Lane and from North Lane to the A19 northbound.



The minor watercourses of Bogle Beck and Char Beck cross the A19 close to the staggered junction at Coal Lane.

The following paragraphs outline the main issues that the improvement scheme seeks to address.

2.2.2 Safety

Safety concerns have been an ongoing concern at the at-grade junctions in question for a number of years. Significant improvements have been made to the junction by Highways England, including various road marking and traffic sign improvement schemes, the last of which was carried out in 2008. These consist of enhanced markings and red surfacing at the junctions, 'SLOW' markings within areas of red surfacing on the A19 in advance of the junctions, and remounting of signs on longer posts to improve visibility.

However, the existing at-grade staggered junction continues to have a poor safety record and Highways England does not wish for the safety benefits that have already been achieved to be eroded through intensification of use of the junction.

Details of personal injury accidents that have occurred on the highway network within the vicinity of the junction have been obtained from HBC for the most recent five year period (between May 2011 and April 2016). The plot of the accidents by severity is provided in Appendix A. A summary of this information is set out in Table 2.2, below.

Table 2.2: Accident Summary

	Number of Accidents	Accident Severity		
		Slight	Serious	Fatal
A19 Junction with North Lane	3	3	0	0
A19 Junction with Elwick Road/Coal Lane	6	4	1	1
Total	9	7	1	1

Nine accidents were recorded in the area in question during the five year period. One of these resulted in fatal injuries, one in serious injuries and the rest in injuries of slight severity. The fatal accident involved a vehicle pulling right out of Elwick Road and colliding with an oncoming vehicle on the A19. The serious accident involved a single vehicle colliding with the traffic bollard at the junction of the A19 and Elwick Road as a result of the driver being fatigued.

Of the accidents of slight severity, one was caused by snowy road conditions causing a rear shunt whilst vehicles were waiting in the central reservation to turn right from the A19 into Elwick Road. Another resulted from a vehicle crossing the carriageway into the path of an oncoming car as a result of the person suffering from illness. A further of these accidents resulted from a single vehicle losing control and leaving the carriageway to the nearside and colliding with two lamp posts and a fence. Three of the remaining four accidents of slight severity involved vehicles wishing to turn right from one of the side roads (Coal Lane, North Lane or Elwick Road) crossing into the path of a vehicle on the mainline carriageway of the A19. The final accident of slight severity was caused by a car slowing for another vehicle wishing to turn right at A19/North Lane junction causing a rear shunt as the vehicle behind was following too closely.

It should also be noted that following a fatal accident at the at-grade junction immediately to the south of the junctions for Elwick the Coroner recommended to the Highways Agency (as was) that the junction should be closed to traffic wishing to turn right.

A GD04 Safety Risk Assessment has been prepared for Highways England that provides a more detailed analysis of the safety issues. This is also included in Appendix A.

2.2.3 Existing Capacity

In February and March 2016, video surveys were conducted to establish the extent of queuing affecting the junction of the A19/Coal Lane/Elwick Road. A note summarising the information can be found in Appendix B. This shows:

- The frequency of vehicle queuing in the evening peak period gives rise to a potential road safety concern on the right turn lane from the A19 northbound to Elwick Road.
- There are regular instances of visible queuing ranging from 1 vehicle (assumed total queue of 8 vehicles) to a maximum of 6 PCUs (assumed total queue of 13 vehicles) in length during the PM peak. Queuing to such extent is considered to have an impact on decelerating vehicles on the main line. Only one instance of queuing has been noted in the morning peak period by comparison.
- Highways England has considered the layout of the junction with reference to Departmental Standard TD42/95 'Geometric Design of Major/Minor Priority Junctions'. With reference to this guidance it is noted that the junction currently has a deceleration length of approximately 120m, which is slightly above the requirement for a junction of this type. However, this would only allow for a reservoir queuing length of 1 vehicle. When queuing occurs in excess of this, the lane is unable to perform its designated function for deceleration which would be likely to result in unsafe slowing of traffic in lane two of the A19 mainline.

2.2.4 Future Housing Growth

The existing situation shows the potential for major road safety concerns and junctions that are often at capacity in the evening peak period in particular. Future growth in background traffic levels will only exacerbate these issues, even before any additional growth. Therefore, some form of mitigation will be needed. Such mitigation will ensure HBC is able to demonstrate the deliverability of the Local Plan at the public examination in mid-2017. Without any mitigation works the housing numbers identified for the western edge of Hartlepool are undeliverable given the impact the additional trips would have on the already overstretched infrastructure as highlighted above.

In particular there are five housing sites (three with planning permission, two without) that will be supported or enabled by the delivery of this scheme. These are as follows:

- Quarry Farm (81 units approve, on site). The site is situated on Elwick Road, approximately 3km from Hartlepool town centre. The site is bounded by Elwick Road

to the south, and woodland to the east and north east. To the north is a gully and to the west a fence line that separates the site from arable land. The site is 4.91 hectares.

- Quarry Farm 2 - (220 units, planning application pending decision). The site lies to the west of Carniston Road off Elwick Road, approximately 3.2km from Hartlepool town centre. It is bounded by the Quarry Farm site to the south (see above).
- Coniscliffe Road (39 units approved) - detailed consent for 39 residential dwellings. The site is situated on the western edge of the built up area of Hartlepool to the immediate west of the West Park residential area and accessed from Coniscliffe Road. The site lies approximately 2.8 km west of Hartlepool town centre and is 3.5 hectares in area. It comprises an agricultural field and an area of woodland adjacent to the southern boundary. The field is bordered mature hawthorn-based hedgerows on its northern, western and southern boundaries and a combination of hedgerow, trees and the rear fences of residential properties on its eastern boundary.
- Tunstall Farm (110 units approved) - the site is 7.8 hectares and is accessed via a new road from Valley Drive. The site adjoins the urban edge of the Valley Drive area of Hartlepool and represents a sustainable extension to it. The site is physically contained by existing housing development along Valley Drive at its western boundary and Hylton Road at its northern boundary.
- High Tunstall - also on the western edge of the existing urban area, the proposal for the High Tunstall development will comprise approximately 1,200 new homes delivered by a sustainable scheme incorporating a new primary school and playing fields, a green wedge, sustainable drainage provision, local centre, play facilities and a care home. The development will link into adjacent developments through the provision of public footpaths and Rights of Way and will connect into the public transport network. The site is a proposed allocation in Local Plan. A planning application has been submitted but there is currently a holding recommendation against it due to the unresolved highway issues related to the scheme proposals that are the subject of this SOBC.

Highways England has written to HBC to make clear that in accordance with available evidence they intend to issue formal recommendations against grant of planning permission in respect of developments likely to result in a measurable increase in the number of trips at the existing junction, unless suitable mitigation can be secured.

2.3 Objectives

Through discussions with HBC and Highways England, the following objectives for any improvement scheme have been developed:

- Objective 1: To support the diversification and growth of the Hartlepool economy by unlocking the potential for significant levels of new housing on the north western edge of Hartlepool;
- Objective 2: To relieve pressure on the existing A179 and A689 routes from Hartlepool to the A19 through the creation of a third good quality access from the A19;
- Objective 3: To reduce the number of accidents and associated casualties on this section of the A19;
- Objective 4: To support the aspirations of Highways England to turn the A19 into an “Expressway” from the A168 to the A1;
- Objective 5: To protect the integrity and character of Elwick village (part of which is a Conservation Area), through significantly reducing the number of cars passing through the village to and from the A19.

2.4 Measures for Success

Table 2.3 below identifies the metrics that will be used to assess whether or not the scheme has successfully delivered the objectives.

Table 2.3: Measures for Success

Objective	Indicator	Target
Objective 1: Support Economic Growth	Number of housing units directly delivered	Delivery of 2000 housing units by 2031
	Number of construction jobs created supported.	Create or safeguard over 3000 jobs by 2031
Objective 2: Relieve capacity constraints	Available capacity of A179 and A689 routes (defined using outputs from the Hartlepool AIMSUN model)	Additional capacity on the A179 and A689 to allow housing growth (measured using outputs from the Hartlepool AIMSUN model-targets to be decided)
Objective 3: Reduce accidents	Number of people killed and seriously injured	40% reduction by 2020 in line with Highways England’s general target.
Objective 4: Improve network efficiency	Average travel times between A689 and A179	Average travel times of a “mile per minute” by 2025
	Number of at grade junctions with central reserve gaps	Closure of all central reserve gaps by 2025
Objective 5: Protect Elwick Village	12 Hour traffic flows in Elwick Village (Elwick Road)	Decline in traffic flows over 12 hour period and in morning and evening peak hours (targets to be decided).

2.5 Scope of Works

The most promising option for mitigation (subject to further option testing) involves the following elements:

- The construction of an overbridge and compact grade separation at the current Elwick North junction to the A19;
- Link from Grade Separated junction to Coal Lane to enable cars travelling from the north on the A19 and from Hartlepool in the east still to be able to access Coal Lane. Also provide link to residential properties to the south of Coal Lane/A19 junction;
- A new bypass to the north of Elwick village comprising a 1.1km, single two lane all-purpose road, 7.3m in width with 1m hard strip to both sides, from the A19 to Dalton Road, east of Elwick;
- Creation of farm access points at necessary points on length of bypass; and
- 400m of additional tie-in for side roads.

Plans of this most promising option can be found in Appendix C.

2.6 Constraints and Interdependencies

2.6.1 Constraints

Initial investigations have revealed some constraints which may have an impact on the delivery of the scheme. These include:

- Proposals for a Compact Grade Separated junction will require acquisition of land outside of the highway boundary;
- Protection or diversion of utility equipment;
- A small number of properties are located in the vicinity of the existing Coal Lane staggered junction;
- A small cemetery is located on the north side of the minor road to the east of the A19 at the Coal Lane junction;
- The flooding risk associated with the Bogle and Char Becks.

The next stage of design work will seek to address and/or mitigate these constraints.

2.6.2 Interdependencies

Significant investment has taken or is planned to take place on the A19 within the Tees Valley as identified below. It will be important to ensure that works relating to the different schemes are planned sensitively to minimise disruption to road users.

Completed Schemes

A £3.7m Highways Agency (as was) Pinch Point scheme aiming to reduce congestion for motorists accessing the A19 at the A19/A689 junction at Wynard was completed in 2014. This saw the widening of slip roads and the introduction of traffic signals at the junction which lies to the south of the proposed scheme.

Planned Schemes

Two schemes are included in the first Road Investment Strategy (RIS1) 2015-2020 being delivered by Highways England. These are as follows:

- A19 Norton to Wynard - widening to three lanes; replacing the concrete surface with low-noise surfacing.
- A19 Technology enhancements - new technology bringing the A19 to motorway standard; including detection loops, CCTV cameras and Variable Message Signs to provide better information for drivers and active traffic management across Tyne and Wear.

Other schemes of relevance planned for the area within the next five years include:

- A689 Wynard Road improvements - signalisation and road widening to complement the Pinch Point scheme at the A19 junction.
- Various s106 improvements associated with existing planning permissions including:
 - Signalisation of the A19/A179/B1280 junction;
 - Easington Road Roundabout signalisation;
 - Merlin Way toucan Crossing and bus lay-by;
 - A179 / Merlin Way / Westwood Way lane widening;
 - A179 / Front Street lane widening;

- Wooler Rd / Elwick Road / Park Road traffic signal improvements;
- Wooler Road, puffin crossing near Whitehouse pub;
- Brenda Road puffin crossing;
- A689 / Wolviston Services signalisation of roundabout;
- A689 / A1185 signalisation of roundabout;
- A689/Stockton Road/ Brierton Lane signalisation improvements;
- Brierton Lane/ Catcote Road signalisation;
- Catcote Road / Truro drive lane widening ;
- Old Cemetery Road traffic calming;
- Brus Tunnel improvements;
- Elwick Road right turn lane into Quarry Farm site.

Dependent Housing Sites (as listed previously)

- Land at Quarry Farm (approved)
- Land at Quarry Farm Phase 2 (awaiting decision)
- Land South of Elwick Road High Tunstall (awaiting decision)
- Coniscliffe Road (approved)
- Tunstall Farm (approved)

Further consideration will be given to internal and external success factors upon which the successful delivery of the preferred scheme is dependent, as part of the next stage of works.

2.7 Stakeholders

The following stakeholders have been identified for the scheme:

- Hartlepool Borough Council (internal stakeholders in Planning, Highways, Ecology, Rights of Way, Estates);
- Highways England;
- Tees Valley Combined Authority;
- Tees Valley Unlimited (LEP);
- Environment Agency;
- Local landowners;
- Housing developers, particularly those working on the High Tunstall Farm/East of Naisberry Farm and Quarry Farm sites;
- Elwick Parish Council;
- Dalton Piercy Parish Council.

A range of consultation activities is being planned as the scheme development progresses. So far the HBC project team has had regular meetings with Highways England and the housing developers for the above named sites. A meeting has also taken place with the landowners and their agent in relation to the route of the bypass element of the most promising option and other options considered. The scheme is also included in the Preferred Options Local Plan document that is open for consultation until the end of July 2016 as well as the Local Infrastructure Plan which supports the development of the Local Plan.

It should also be noted that consultation with Elwick Parish Council, both as part of the ongoing work on this scheme and through liaison over the Local Plan Preferred Options and the Rural Neighbourhood Plan, has been positive and it seems there is good local support for the scheme from the residents of the village.

2.8 Options

The scheme consists of two principal elements - the junction and a bypass, each with a number of options as described below.

2.8.1 Options for the Junction

In terms of design, there has been significant investment by Highways England to look at possible options for the junctions on the A19 in the vicinity of Elwick Village. A report was produced in November 2014 (see Appendix D) which gave a number of options for improvements at the junctions, all with the idea of closing off the central reservation to stop right turn manoeuvres at the junctions. Five options were identified and all included a Compact Grade Separated junction. These options are as follows:

- Junction Option 1: Overbridge North of Coal Lane Staggered Junction, existing left in/left out junctions retained;
- Junction Option 2A: Overbridge at Coal Lane Staggered Junction, new left in/left out junctions to the north;
- Junction Option 2B: Overbridge at Coal Lane Staggered Junction, new northbound left in/left out junction to the north, new southbound left in/left out junction to the south;
- Junction Option 3: Overbridge North of Coal Lane Staggered Junction, new northbound left in/left out junction to the south, existing southbound left in/left out junction retained;
- Junction Option 4: Overbridge South of North Lane T-Junction, realignment of Coal Lane adjacent to the A19;
- Junction Option 5: Overbridge South of North Lane T-Junction, realignment of Coal Lane west of the A19.

2.8.2 Options for the Bypass

In order to mitigate the impacts of additional traffic through Elwick Village a bypass has been identified by HBC to tie in with the proposed compact grade separated junction designs described as Option 4 and Option 5 above. An indicative route for the bypass has been developed but further work is still required to investigate this more fully. Discussions are currently ongoing with local landowners. A summary of the bypass options considered can be found below:

- **Bypass Option 1 (Most Promising Option):** From the eastern end, the proposed new junction on Elwick Road will remove significant amounts of traffic movements around “devil’s elbow” as the route will then only be used by village traffic. The proposed route has been aligned so as to minimise the impacts on the farmer’s fields and loops round to the northern access on the A19 at Elwick. This option of a bypass will take significant volumes of traffic out of the village making it a safer environment for the residents of Elwick. As previously mentioned it will also provide a safe and effective third access point from the A19 into and out of Hartlepool.
- **Bypass Option 2:** This option again involves a new grade separated junction on the A19 northern access. The route of the bypass differs slightly and comes closer to the village and to the south of Martindale Farm but joins Elwick Road at the same point Bypass Option 1. Issues with this option include the fact that if the bypass goes to the south of Martindale Farm it will cut off the farm access which leads to the south and through the village. This would therefore likely require the creation of a bridge or underpass at significant cost. The route also brings the bypass significantly closer to the village and therefore is likely to create more negative impacts in terms of noise and disturbance to the homes along the northern edge of the village. It also dissect a greater number of farmers’ fields.
- **Bypass Option 3:** This option will created a new junction at the southern end of “devil’s elbow” or slightly further towards Elwick Village for a bypass to run to the south of the village and join with a new grade separated junction at the southern Elwick junction with the A19. Issues with this proposal include that any improvement to the southern Elwick junction on the A19 will then need to provide an access for residents of Elwick into the village linking up with Church Bank. This is an extremely narrow steep road leading into the village from the south. The road currently has retaining walls on both sides and is, at points, impossible for two vehicles to pass. Even if there was land available to do works to widen this road this would be at significant cost and may not even be deemed acceptable as it falls within the Elwick Village conservation area. Furthermore, the land levels to the south of the village are considered significantly more problematic as the land falls away from the road around the south of the village and will involve the bypass having to pass through environmentally sensitive areas of the countryside at Char Beck and possibly the Howls. These areas are both protected by policies within the emerging Hartlepool Local Plan 2016 due to their environmental and ecological importance. Crossing the beck will also result in additional costs to the scheme by means of a bridge and could ultimately still have an environmental impact by means of additional pollution from run-off such as salt from the roads into the water course.
- **Bypass Option 4:** This option would have created a new road running north from the Elwick Road / Dalton Back Lane junction northbound towards the A179 at the northern Hart access. This would have enabled traffic from the West Park and Naisberry Estates and those nearby estates with an alternative access to the A179.

However this option will not link with any improvements at the Elwick junctions and provide a third safe access point into Hartlepool.

2.8.3 Alternative Schemes

In addition to the options listed above, the upgrading of the existing junctions at the A179 and A689 in conjunction with the closure of gaps in the central reservation (and the associated at grade junctions at Elwick and Dalton Piercy), has also been considered.

3 Economic Case

3.1 Introduction

The Economic Case provides evidence of how the scheme is predicted to perform in relation to its stated objectives, identified problems and targeted outcomes. Ultimately, the Economic Case determines if the proposed scheme is a viable investment.

The preferred scheme appraisal focuses on those aspects of scheme performance that are relevant to the nature of the intervention. However, the impacts considered are not limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of the proposal are all examined, using qualitative, quantitative and monetised information. In assessing value for money, all of these are consolidated to determine the extent to which the scheme benefits outweigh its costs.

The economic appraisal has been tailored to reflect the needs of the scheme and has been prepared in accordance with DfT's WebTAG documents.

3.2 Options Appraised

The Strategic Case sets out the options which are considered appropriate to provide additional capacity and to tackle the known safety concerns on the A19 at Elwick. These have been developed into three distinct options that have been assessed using the EAST assessment tool and against the project objectives. These three options are as follows:

- Option 1: Overbridge and Compact Grade Separated Junction at Coal Lane;
- Option 2: Overbridge, Compact Grade Separated Junction at North Lane, Bypass of Elwick village;
- Option 3: A19 Gap Closures.

The EAST assessment is presented in Appendix E and indicates that the best performing option is Option 2 that includes an overbridge and compact grade separated junction at North Lane and an associated bypass of Elwick village. The main reasons this option performs better include:

- It will support the delivery of significant housing growth whilst preserving the character of Elwick village;
- Through supporting housing growth it will assist in encouraging economic growth in the district;

- It will mitigate existing safety and capacity issues on both the strategic and local network (e.g. in Elwick village);
- It will improve accessibility particularly for non-motorised users, reducing the severance caused by the A19;
- The scheme is supported by the emerging Local Plan;
- Funding towards the scheme is likely to be forthcoming from private developer contributions related to housing proposals directly supported by the scheme.

Option 3 was scoped out for the following reasons:

- This option will reduce accessibility for residents of the local villages, requiring a lengthy diversion to get onto the A19;
- A lack of viable alternative routes for the current right turning traffic with the potential for an increase in traffic on unsuitable rural roads;
- An increase in capacity pressures on the A179 and A689 junctions;
- Less potential to open up land for development in support of the Local Plan aspirations.

The identified most promising option will constitute the ‘Do Something’ option for appraisal purposes which will be assessed against a ‘Do Minimum’ option whereby no improvement scheme is introduced.

3.3 Assessment Approach

The Value for Money assessment follows guidance contained within ‘Value for Money Assessment: Advice Note for Local Transport Decision Makers - December 2013. The calculation of benefits was based on the output from the Tees Valley Strategic Highway Model.

The initial BCR has been assessed using a WebTAG compliant framework drawing on the following:

- An assessment of monetised economic impacts (i.e. business users and providers travel time and vehicle operating cost impacts);
- An assessment of monetised environmental impacts, namely: greenhouse gas emissions;

- An assessment of monetised social impacts, namely: commuting and other users travel time and vehicle operating cost and accident impacts; and
- An assessment of public accounts impacts, namely: cost to the broad transport budget; and changes in indirect taxes.

Building on the initial monetised costs and benefits, certain other impacts have been assessed and where appropriate monetised in accordance with the methodology recommended within the relevant WebTAG units. The impacts that have not been monetised have been given an overall qualitative assessment score:

- Impacts on Journey Quality;
- Impacts on Severance;
- Impacts on Landscape; and

A Value for Money conclusion has been drawn considering the evidence pulled together from the above analysis.

3.3.1 Scope for Proportionality in the Assessment

This business case has made an assessment of the potential impacts presented in DfT WebTAG guidance. As yet, an assessment has not been provided for:

- Delays during construction and maintenance;
- Impacts on Townscape;
- Impacts on Historic Environment;
- Impacts on Biodiversity;
- Impacts on Water Environment;
- Regeneration;
- Wider impacts;
- Physical activity;
- Security;

- Option values and non-use values;
- Accessibility; and
- Affordability.

Delays during Construction and Maintenance

Delays during construction and maintenance are not expected to have a significant effect on the scheme BCR and Value for Money. The nature of the scheme is such that it will largely be constructed off-line, with minimal impact on existing road users. Therefore construction delay and maintenance impacts have not been included in the analysis.

Impacts on Townscape and the Historic Environment

Due to limited information available on the impacts at this time an assessment has not be undertaken. As the scheme is not located within the town the impacts will be limited. The scheme is not likely to impact on any sites or buildings of historic interest although there is a small cemetery that will need to be considered as part of the design. This is located on the north side of the minor road to the east of the A19 at the Coal Lane junction. There is a Conservation Area within Elwick village which should be benefit from the scheme and it is also acknowledged that the Elwick Fish Ponds (between Elwick Village and the A19) that are a Scheduled Ancient Monument but should be unaffected by the proposals but will be considered as part of the design process.

Impacts on Biodiversity

Due to limited information available on the impacts at this time an assessment has not be undertaken. However, the scheme is likely to lead to the direct loss of a small extent of habitats that are common to the area and of relatively low value. There is potential to impact on protected reptiles (if present) and ubiquitous nesting birds. There is also likely to be loss of hedgerows and mature trees, although these will be compensated for by new planting. Whilst considering the various options the views of the Council's ecologist have been sought and the most promising option seeks to minimise impacts on ecology and biodiversity.

Impacts on Water Environment

Due to limited information available on the impacts at this time an assessment has not be undertaken. However, the scheme will lead to an increase in the impermeable area of land requiring drainage and could impact on the Bogle and Char Becks.

Regeneration

WebTAG Unit A2.2 'Regeneration Impacts' indicates that a regeneration assessment only needs to be considered for schemes that affect travel to, from or within one or more regeneration areas. The scheme does not impact on such an area, and therefore a regeneration assessment is not deemed necessary.

Wider Impacts

It is confirmed that the scheme is an important part of facilitating significant housing growth in Hartlepool and this will be assessed separately via the methodology presented in WebTAG Unit A2.3. It is not considered that the level and type of benefits to be created by the scheme meets the requirement for an assessment in line with TAG Unit A2.1.

Physical Activity

The proposed scheme is expected to result in minimal impact in terms of physical activity therefore an assessment has not been carried out (TAG Unit A4.1).

Security

No change to security is predicted to arise due to the scheme and therefore no assessment has been completed.

Option Values and Non-Use Values

Option and non-use values should be assessed if the scheme being appraised includes measures that will substantially change the availability of transport services within the study area (e.g. the opening or closure of a rail service, or the introduction or withdrawal of buses serving a particular rural area). This appraisal is not required for the most promising option as there will not be a substantial change in the availability of transport services within the study area.

Accessibility

As there are no proposed changes in routings or timings of current public transport services, an assessment of access to services is not proposed.

Affordability

The scheme is likely to slightly reduce travel costs due to reducing travel distances for those that currently avoid using the existing at grade junctions due to safety concerns. However, its impacts on overall affordability will be small and therefore no assessment has been undertaken.

3.4 Assumptions

This section summarises the key assumptions supporting the Value for Money analysis. This includes the assumptions set out in WebTAG as well as further assumptions specific to the most promising option.

3.4.1 Traffic Model/Economic Assessment Tools

Traffic inputs to the economic assessment have been derived from the Tees Valley Multi-Modal Model. Details of the modelling are documented in Appendix F.

Forecast outputs from the model have been input to the economic assessment. Travel time and vehicle operating cost have been assessed using DfT's Transport User Benefit Appraisal (TUBA 1.9.6 with economic parameters file 1.9.6) software program with matrix inputs (trips, time and distance) taken from the strategic highway assignment model.

Accident benefits have been assessed using based upon the analysis within the GD04 Safety Risk Assessment prepared for Highways England (see Appendix A) and the methodology within Highways England's Project Appraisal Report (PAR6.3) for determining accident benefits.

3.4.2 Economic Assessment Parameters

TUBA Annualisation

In accordance with the guidance, the benefits generated in the modelled time periods have been annualised using annualisation factors. The annualisation factors are defined as the number of times each time period occurs over a full year.

Annualisation has been undertaken in accordance with the principles laid out in the TUBA guidance document (TUBA: General Guidance and Advice, version 1.9.5, November 2014, DfT). The Tees Valley Multi-Modal Model outputs are based on two single hour time slices for the AM and PM peaks and an average Inter-Peak period. This means the TUBA outputs are based upon a 12-hour daily rate, with the off peak and weekend benefits/disbenefits disregarded. The annualisation factors have been calculated upon observed counts generated at the last Tees Valley wide survey sites, to provide a factor best matching that of the Tees Valley wide travel patterns.

Following DfT advice given the very low percentages observed in the peak periods, it was agreed to form a new period associated with model outputs to better estimate benefits in the border peaks (marked in the Table 3.1 by *). This new peak would be formed of peak hour matrices with IP costs. The breakdown of the 12-hour period is outlined in Table 3.1.

Table 3.1: Annualisation Factors

Time Period	Mean Weekday Traffic Count	Model Time Slice	AM	PM	IP	BP
7:00 - 8:00	2587		*			0.74
8:00 - 9:00	3491	AM - 3491	1.00			
9:00 - 10:00	2451		*			0.70
10:00 - 11:00	2130	Ave IP - 2402			0.89	
11:00 - 12:00	2244				0.93	
12:00 - 13:00	2345				0.98	
13:00 - 14:00	2480				1.03	
14:00 - 15:00	2460				1.02	
15:00 - 16:00	2751				1.15	
16:00 - 17:00	3477			0.96		
17:00 - 18:00	3616	PM - 3616		1.00		
18:00 - 19:00	2522			*		0.70
Total			1.00	1.96	6.00	2.14

This provides a TUBA annualisation factors based upon 253 working days of 253 AM, 496 PM, 1518 IP and 541 Border Peak periods per annum.

Present Value Year/Discounting

The economic assessment has been summarised with costs and benefits discounted to a 'present value year' of 2010, at a 'discount rate' of 3.5% per annum for the first 30 years, from the date of appraisal and a rate of 3.0% for the subsequent 30 years.

Appraisal Period

The appraisal has been completed for a 60 year assessment period (2020-2079).

Opening Year

Opening Year for the scheme is assumed to be 2020. This 'first scheme year' of 2020 has been taken into account in the capital expenditure calculations and the TUBA assessment.

TUBA Parameters

Recommended 'default' parameters and values have been used in the TUBA assessment, except where indicated in Appendix G.

Allowances for Uncertainty

Currently only a core scenario has been considered. This includes a best estimate of vehicle trip growth using NTEM and NTM growth as given, with NTEM traffic growth applied to identified development locations. A further assessment will be undertaken in relation to the Dependent Development as per WebTAG Unit A2.3 (see section 3.5.1 below) as part of the next stage of works.

3.5 Assessment of Economic Impacts

Transport Economic Efficiency benefits have been quantified using the DfT's TUBA software. Based on the appraisal undertaken, the scheme is expected to deliver a Present Value of Transport Economic Efficiency benefits of around £68.5 million. Table 3.2 provides a summary of the benefits.

Table 3.2 – Summary of Transport Economic Efficiency Benefits

Category	Monetised Benefits (£000s 2010 prices)
Travel Time Savings	
Commuting	43,976
Business	1,754
Other	22,915
Vehicle Operating Costs	
Commuting	-737
Business	263
Other	263
Private Sector Provider Impacts	
Revenue	64
Present Value of TEE Benefits	68,505

3.5.1 Dependent Development

In addition, the scheme will allow the development of several key residential development sites on the western edge of Hartlepool. This will be assessed in accordance with WebTAG Unit A2.3 and will consider the planning gain associated with these sites minus the external impact of housing development (including external transport related costs). This work will

be undertaken during the next stage of works following additional design and micro-simulation modelling of the scheme as this will provide a more robust and accurate reflection of the impacts.

3.6 Assessment of Environmental Impacts

3.6.1 Greenhouse Gas Emissions

The outputs from the TUBA software have been utilised to assess the impacts of the scheme on Greenhouse Gas emissions. The TUBA results indicate the scheme will deliver a PVB of £475,000 due to the change in carbon dioxide equivalent (CO₂e) emissions.

3.6.2 Landscape

The provision of the grade separated junction and overbridge is likely to cause some visual intrusion in the existing landscape as a result of the bridge structure, slip roads and lighting. The design will seek to mitigate these impacts as far as possible through landscaping and planting. In addition the bypass and junction may cause fragmentation of field pattern and landform and some loss of arable land and/or detachment of other arable land.

3.7 Assessment of Social Impacts

3.7.1 Safety

The scheme will reduce accidents and casualties through closure of central reserve gaps. The GD04 Safety Risk Assessment prepared for Highways England has indicated the closure of the gaps would save on average 0.6 collisions per year. Assuming a conservative scenario of no increase in traffic levels it has been calculated that this would lead, as a minimum, to a reduction of 32 accidents over a 60 year assessment period. This equates to a Present Value Benefits for Accidents of £1.746m. This is based on a simplified assessment approach as set out in Highways England's Project Appraisal Report methodology and spreadsheet tool (PAR6.3).

3.7.2 Journey Quality

The proposed scheme would alleviate driver stress due to the removal of gaps in the central reserve, some field access closures and provision of a grade separated junction. Traveller care would also be improved due to the provision dedicated routes for cyclists and pedestrians.

3.7.3 Severance

At present, journeys to either side of the A19 are only possible by car in the immediate vicinity of the scheme. The proposals will include the provision of a new cycleway/footway which will be of benefit to local residents and create new journey opportunities.

3.8 Appraisal Summary Table

An AST will be completed at the Outline Business Case stage as per DfT guidance.

3.9 Value for Money Statement

The PVB for each of the monetised aspects of the economic appraisal have been set out above. The relevant Transport Economic Efficiency (TEE), Public Accounts (PA) and Analysis of Monetised Costs and Benefits (AMCB) tables are included at Appendix H.

The difference between the PVB and the PVC represents the Net Present Value (NPV) of the scheme. The ratio of PVB to PVC produces the Benefit-Cost Ratio (BCR). The BCR provides an indication of the value for money of a particular scheme. DfT guidance in 'Value for Money Assessment: Advice Note for Local Transport Decision Makers' (December 2013) states that:

“the Initial BCR defines the initial Value for Money category. Proposals are judged to offer poor, low, medium, high and very high Value for Money based on the BCR boundaries. These categories include:

- Poor VfM if the BCR is below 1.0
- Low VfM if the BCR is between 1.0 and 1.5
- Medium VfM if the BCR is between 1.5 and 2.0
- High VfM if the BCR is between 2.0 and 4.0”

The overall PVB and PVC for the scheme, as well as the calculation of the scheme NPV and initial BCR, are set out in Table 3.3.

Table 3.3 – Calculation of Scheme NPV and Initial BCR

Monetised Element	Present Value (£000s 2010 prices)
User Benefits	68,505
Accidents	1,746
Greenhouse Gases	475
Wider Public Finances (Indirect Tax Revenues)	-1,159
<i>Sub-Total PVB</i>	<i>69,566</i>
PVC	19,756
Scheme NPV	49,810
Initial BCR	3.52

The scheme, with an initial BCR of 3.5, therefore represents a project with **High** value for money.

The Value for Money Statement provides a summary of the key outputs from the appraisal of the scheme, and is set out in Table 3.4.

Table 3.4 – Value for Money Statement

Monetised Impacts	Assessment
Monetised Benefits	For the purpose of this business case, the PVB reflects highway user benefits and accident benefits PVB = £69.6 million (2010 prices)
Costs	For the purpose of this business case, the PVC reflects the capital cost of the scheme, including land, preparation and design/supervision costs as well as an allocation for real inflation, risk and optimism bias. PVC = £19.8 million (2010 prices)
Initial Benefit Cost Ratio	Scheme NPV = £ 49.8 million (2010 prices) Initial BCR = 3.52
Non-monetised Benefits	In addition to the monetised benefits the scheme will also provide: <ul style="list-style-type: none"> • Significant improvements in severance; • Significant improvements in journey quality.

Monetised Impacts	Assessment
Direct Economy Impacts	The scheme will open up land for housing development that will have significant value for the local economy.
Distributional Impacts	A full distributional analysis of the impacts will be completed at the appropriate time.
Key Risks/Sensitivities	<ul style="list-style-type: none"> • Land acquisition and requirement for planning permission; • Integration with development sites; • Wider stakeholder management; • Availability of required design and management resources and potential loss of key personnel.
Value for Money Category	In conclusion, based on the scheme's monetised and non-monetised benefits and the initial BCR, the overall VfM category for the scheme is High.

4 Financial Case

4.1 Introduction

This section describes the approach taken to assess the affordability and commercial viability of the scheme. In particular, it sets out the approaches taken to:

- estimate capital costs;
- potential funding sources and the role of private sector investment; and
- overall affordability.

The total outturn costs and expenditure profile are presented, in line with the level of detail available at this point. A more detailed assessment of funding options and possible funding models will be undertaken as part of the next stage of works.

4.2 Costs

High level capital costs for the most promising option are set out in this section. Only construction costs are presented at this stage. Whole life costs of delivering the package over a period of time with associated maintenance and operational costs will be considered as part of the next stage of works.

Construction cost estimates have been developed based on the core components. At this stage, costs are indicative. At present only very indicative costs for the bypass have been developed by HBC and the costings produced by Highways England for the junction element are also provisional, having not been scrutinised by their internal commercial team. This is the area of work which will require more immediate design works following completion of the SOBC. It is anticipated that these works will be carried out in-house by the HBC's Engineering Design Management Team.

Construction costs have been derived using unit rates. In addition to basic construction costs, allowance has been included for costs associated with:

- preliminaries;
- utilities;
- land; and
- design and supervision.

Table 4.1 Scheme Costs

Cost Item	Cost (millions, Q3 2015)
Construction and Preliminaries	8.66
Land costs	0.90
Design and supervision	1.84
Risk/Contingency (20%)	1.73
Optimism Bias	4.83
TOTAL COST	17.97

4.2.1 Cost Assumptions

Investment costs have been forecast at current prices.

At this stage a Quantified Risk Assessment has not been conducted. Therefore a 20% cost contingency has been added to the construction costs to account for unforeseen issues that could cause cost increases.

An allocation has been made for optimism bias. Optimism bias refers to the tendency for scheme promoters to be overly optimistic about scheme costs. Based on the scheme element optimism bias has been assumed to be between 32% and 40% and for the scheme in total is equivalent to 37%. These assumptions will be reviewed as part of the next stage of works. As the scheme progresses it is expected that greater certainty about base construction costs will be reflected in the application of lower levels of optimism bias.

4.3 Budgets/Funding Cover

The scheme could be funded via the various funding/potential funding streams as identified below:

- Local Growth Fund 3: Programme-level bids rather than project-based bids are now being sought for the third round of the Local Growth Fund, which is worth £1.8bn. Most of this funding will be released from 2018 and is subjective to a competitive bidding process, with no area entitled to a particular share of the funding. The scheme could form part of the Tees Valley programme-level bid.

- **Homes and Communities Agency’s Home Building Fund:** There are proposals for £3billion national fund that will be allocated for house building and infrastructure which may be suitable. Further details are not yet known as there have been no formal announcements regarding this funding route.
- **Growing Places Fund:** The £730 million Growing Places Fund supports key infrastructure projects designed to unlock wider economic growth, create jobs and build houses in England. The fund provides a major opportunity for local enterprise partnerships and local authorities to identify and prioritise the infrastructure they need for growth. An allocation has been made to the TVU/TVCA and the Department for Communities and Local Government continues to work with the LEP to support and encourage them in delivering the Growing Places Fund and expects recycled Growing Places Fund to be deployed to support SEPs alongside the LGF.
- **Developer Contributions:** As the scheme will directly enable development this means funds can be secured from the housing developer(s) through S106 legal agreements to repay the amount secured from LGF. When planning permission is given for the housing developments HBC will ensure that a clause is included within the S106 Legal Agreement to repay a pro-rata contribution towards the overall LGF money. This will be based on a per dwelling cost and will have trigger points included for payments as it would be unreasonable to repay an amount every time a property was completed. Through this mechanism, HBC will be able to ensure that the full amount of the LGF grant is repaid.
- **Tees Valley Patient Capital Investment Fund:** The Tees Valley Refreshed SEP indicates the partners are keen to develop bespoke financial approaches which address the specific market failure in regard to residential development. One of the approaches identified is a Patient Capital Investment Fund where public sector investment in infrastructure and other services needed to bring forward new residential, commercial and town centre development, can be repaid back over a much longer time frame to recognise the need for early investment, many years ahead of commercial returns.
- **Prudential Borrowing.** The Local Government Act 2003 introduced new freedoms and flexibilities for local authorities. One of the new powers allowed local authorities to borrow to invest in capital works and assets so long as the cost of borrowing was affordable and in line with principles set out in a professional Prudential Code, endorsed by the Chartered Institute of Public Finance and Accounting.
- **Devolution Deal - Tees Valley Investment Fund.** The Tees Valley Devolution Deal has enabled the TVCA to create an Investment Fund through a 30 year initial allocation of funding for capital financing of at least £15million per year.

5 Commercial Case

5.1 Introduction

This chapter presents the Commercial Case for the scheme. It provides evidence on the commercial viability of the scheme and the procurement strategies that will be used to engage the market.

5.2 Output Based Specification

The outcomes which the procurement strategy must deliver are:

- To achieve cost certainty, or certainty that the scheme can be delivered within the available funding constraints;
- To minimise further preparation costs with respect to scheme design by ensuring best value, and appropriate quality;
- To obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable; and
- To obtain contractor input to risk management and appraisals, including mitigation measures, to capitalise on opportunities to reduce construction risk.

The Output Based Specification for the scheme has yet to be developed although this is to be expected at this stage for the following reasons:

- The need to secure funding approval for the preferred scheme prior to undertaking this significant piece of work;
- The detailed design components are not programmed to begin until Autumn 2016; and

HBC will use either experienced in-house resources or external consultants, who have been involved in other recent highways projects, to develop the Output Based Specification.

5.3 Procurement Strategy

HBC is currently exploring the options for procurement and expect to outline their position through liaison with the Project Board as the design of the scheme progresses. It is likely the new infrastructure will be designed in-house by HBC's Engineering Design and Management Team and delivered through tender using contractors on the HBC's Select List

of Contractors or via the NEPO Framework Agreement for Civil Engineering & Infrastructure Works that commenced on 1 April 2016. Alternatively the scheme could be designed by potential housing developers and delivered in house to an agreed design. In all cases guidance will be taken from Highways England to ensure a partnership approach to the infrastructure developments as the project impacts upon the strategic road network.

The procurement options will be explored in further detail at Outline Business Case stage in line with DfT guidance.

6 Management Case

6.1 Introduction

This chapter presents the Management Case for the scheme and describes how the scheme will be managed and delivered. The methodology used to define the process and procedures necessary to manage this project are based on the PRINCE2 methodology promoted by the Office of Government Commerce (OGC).

6.2 Evidence of Similar Projects

The scheme is expected to be delivered using well understood methods of construction. HBC has experience of managing and delivering complex civil engineering projects as detailed below.

Hartlepool Townwall Coastal Defences (current)

The main components of the preferred option consist of constructing a low level wall, set back from the existing sea wall to reduce the flood risk posed by waves which overtop the existing wall; additionally the works will include replacement and reinforcement of the seaward toe of the existing wall, to maintain the wall stability. HBC has undertaken the design, contract documents, site supervision and financial control of the scheme. The scheme involves the construction of a reinforced concrete structure incorporating a box culvert. Designed to blend into its surroundings as well as carrying out its primary function as a flood barrier. The scheme costs are in the region of £1.5m.

Brenda Road Bridge

HBC undertook the design, contract documents, site supervision and financial control of the scheme. The scheme involved rail track possessions, bridge strengthening, painting and road restraint systems

Hartlepool Transport Interchange

HBC undertook the design, contract documents, site supervision and financial control of the scheme. This scheme was designed originally by Arup for HBC to improve the interfaces of public transport in Hartlepool. The Mayor requested HBC to improve the design and the layout was designed to provide a more practical solution and provide an additional car park that increased revenue for HBC. This scheme also involved working with Network Rail, Northern Rail, taxi associations, traders and the public. It involved the infill of a subway under the live rail line, structural staircases, retaining walls, underground storage of surface water walls and pedestrian shelters, car park and road construction, landscaping and both traffic and pedestrian management to maintain the operations of the rail station



and taxi ranks as well as all the construction works. The scheme cost in the region of £4 million.

6.3 Project Dependencies

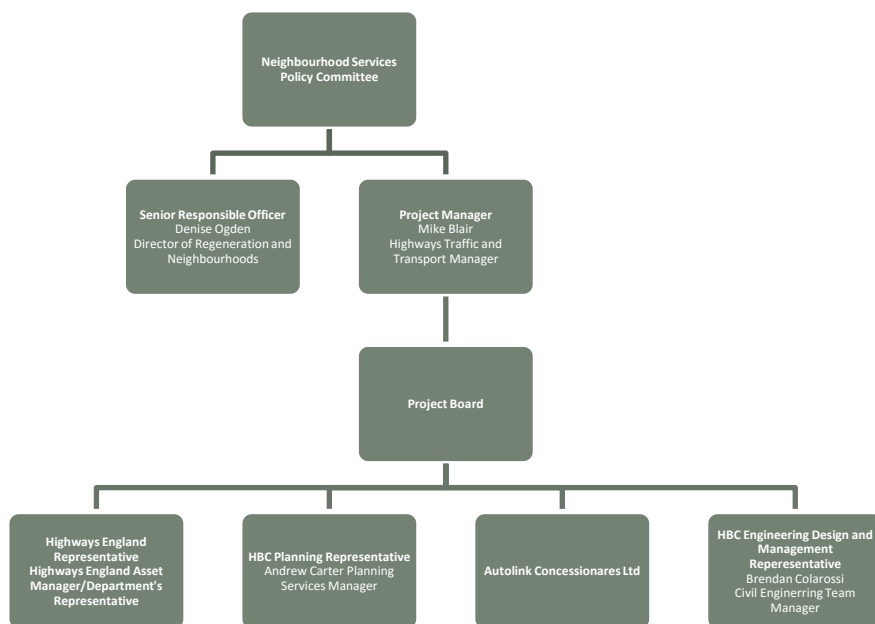
It is anticipated that Highways England would be likely to require the widening of the A19 between Norton and Wynyard to be undertaken at separate time to the overbridge works to minimise the impacts on traffic in terms of delays during construction.

The South West Extension of Hartlepool, as documented in the emerging Local Plan as policy HSG4, is also closely related. The South West Extension is one of the two strategic housing sites within the south of the Borough, delivering a significant proportion of the new planned housing over the next 15 years. It received a “minded to grant” decision from Planning Committee for full permission for 144 dwellings and outline permission for 1116 in October 2015. Significant infrastructure works, including a new access onto the A689, new interconnecting roads, cycleways and footpaths, utilities and services are required for the development to start in the short term and delivery is expected to start within the first five years and will continue throughout the Plan period.

It is noted that no development of the High Tunstall site that will be enabled by the scheme will be permitted which restricts the ability of the Council to implement a link road between this High Tunstall and the South West Extension in the future.

6.4 Governance Structure

The governance structure for the scheme is summarised in the diagram below.



The key roles and responsibilities are summarised below:

6.4.1 Senior Responsible Owner

The Senior Responsible Owner (SRO) will provide a key link between the Neighbourhood Services Committee, Project Board and Project Team. The SRO is responsible for overall delivery of the scheme.

6.4.2 Project Manager

The day to day Project Manager (PM) will focus on delivery of the programme with particular focus on managing the technical team. The PM will work with the SRO to deliver each component of the delivery programme.

6.4.3 Project Board

The Project Board will receive regular updates on the project and advise the project team of changes in political thinking to guide the project strategically. The board will meet on a monthly basis and consist of:

- Senior Responsible Owner;
- Project Manager;
- Highways England Representative;
- Autolink Concessionaires Ltd Representative;
- HBC Planning Representative;
- HBC Engineering Design and Management Representative.

6.4.4 Project Team

The technical Project Team will be responsible for delivering specific work packages contributing to the overall project delivery. Key stakeholder will feed back into the project team and project board through those channels identified in the Communications Plan. It is likely that some of the work packages will be delivered through external consultants procured through established professional services frameworks that are available for use by HBC.

6.5 Project Plan

The key milestones for the project are set out below:

Milestone	Schedule
Undertake feasibility design and costings	July 2016 to March 2017
Refine modelling and appraisal	September 2016 to March 2017
Consultation	January to April 2017
Produce Outline Business Case	March to September 2017
Produce Full Business Case	September 2017 to March 2018
Start Construction	Summer 2018
Scheme open	Summer 2020

6.6 Assurance and Approvals Plan

Project assurance provides the basic framework of controls that assure:

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

The assurance framework most applicable to the chosen funding source will be utilised to provide the necessary approvals and assurance. For example, if the scheme becomes part of the Tees Valley LGF Programme, the scheme will adhere to the Local Growth Fund Management Framework and associated TVCA Local Major Transport Schemes Assurance Framework.

6.7 Communication and Stakeholder Management

A communications plan for the scheme is being developed to keep the public and key stakeholders informed. Methods of communications will be through a combination of letter, press releases, public events, formal public consultation and through the HBC website (including online surveys).

A key element of the Communications Plan will be to keep stakeholders informed on the progress of the project and to gain feedback. The council and its consultants will be available to meet with individuals if required, particularly those directly affected by the project. So far consultation has taken place with Highways England, the relevant housing developers and local landowners. The scheme is also included in the Preferred Options Local Plan document is now open for consultation until the end of July 2016. It should also

be noted that consultation with Elwick Parish Council, both as part of the ongoing work on this scheme and through liaison over the Rural Neighbourhood Plan, have been positive and it seems there is good local support for the scheme from the residents of the village.

Decisions on when and how to communicate will be made in the Project Board meetings. Information provided to the public will always be in a non-technical and accessible format.

A feedback register will be set up and kept up to date to track how the scheme is viewed. This will be regularly shared at monthly Project Board meetings.

6.8 Risk Management Strategy

Risks will be identified and captured in a project risk register. A risk management plan, to include the risk mitigation measures and actions plans for managing risks is being developed by the project team. The likelihood and probability of risks will be regularly evaluated and recorded in the risk register. Initial risks have been identified and are included in Appendix I.

6.9 Project Management

The scheme would be project managed in-house by the HBC's Engineering Design and Management Team.