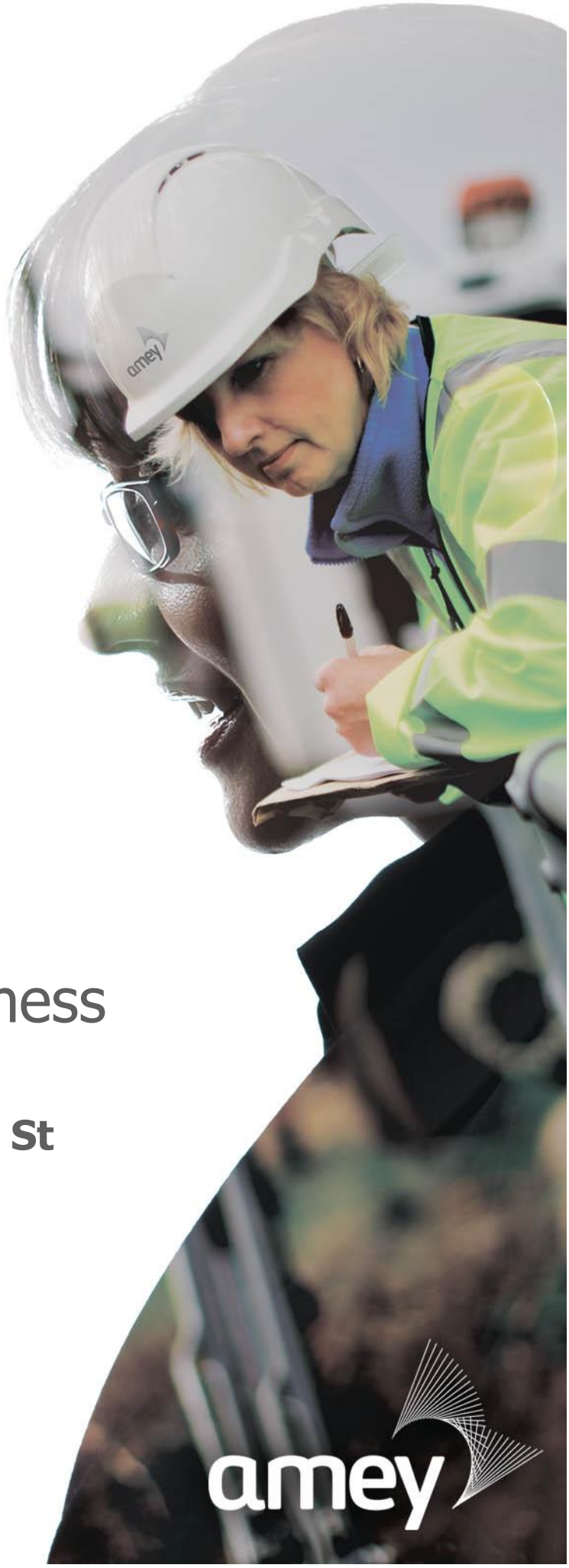

LGF Transport Business Case Report

A226 London Road/ B255 St Clements Way Junction Improvement

CO04300496/001 Revision 03

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Document Control Sheet

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1 Introduction

1.1 Overview

1.1.1 Amey have been commissioned by KCC (Kent County Council) to develop proportionate business cases for various South East Local Enterprise Partnership (SELEP) schemes being promoted by Kent to be funded by the South East Growth deal as part of the Government's Local Growth Fund. This report supports the application for SELEP funding for the A226 London Road/ B255 St Clements Way Junction Capacity Improvements.

1.2 Location of the Scheme

1.2.1 The A226 London Road/ B255 St Clements Way junction is located to the west of Greenhithe in the Borough of Dartford and is a standard 4 arm roundabout. The A226 London Road connects Northfleet to the east and the M25 and Dartford to the west. The A206/ B255 St Clements Way runs north - south through the junction; to the south is Bluewater shopping centre, and access to the A2 whilst the B255 continues south to the village of Bean. The A2 runs east/ west through the centre of the Borough providing a distinction between the more urban areas to the north and rural villages to the south of the Borough.

1.2.2 To the north is the A206 Crossways Boulevard/ Station Road roundabout which provides access to Greenhithe railway station and bus interchange. From here, the A206 continues west to Junction 1a of the M25 and further onto the north of Dartford. The M25/ A282 Dartford Crossing bisects the borough just to the east of Dartford town heading north - south.

1.2.3 Together, these roundabout junctions carry high volumes of traffic and are subject to existing congestion, especially during the peak periods.

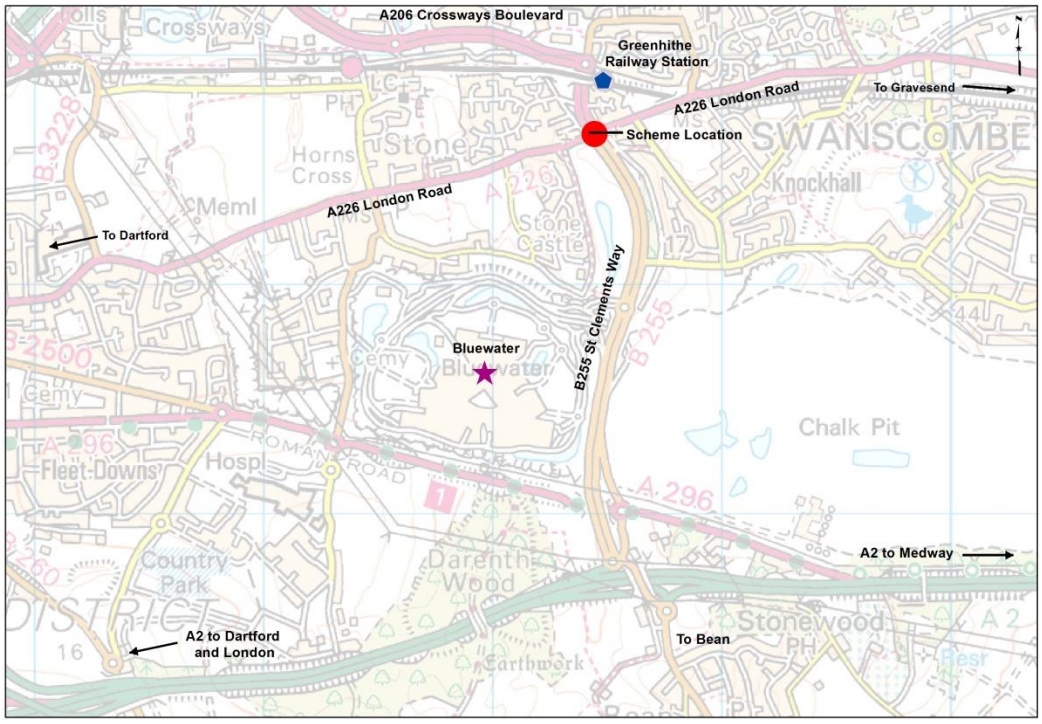

Figure 1-1: Scheme Location

1.3 Background to the Business Case Process

1.3.1 In July 2014, the government negotiated a Growth Deal with 39 Local Enterprise Partnerships (LEPs), which awarded a significant proportion of a £12 billion Local Growth Fund to LEPs.

1.3.2 The South East Local Enterprise Partnership (SELEP) brings together key leaders from business, local government, further and higher education in order to create the most enterprising economy in England through exploring opportunities for enterprise while addressing barriers to growth covering Essex, Southend, Thurrock, Kent, Medway and East Sussex. It is the largest strategic enterprise partnership outside of London.

1.3.3 SELEP has secured £442.2 million in funding from HM Government to boost economic growth - with a particular focus on transport schemes that will bring new jobs and homes until 2021. This includes £358.2 million for new growth schemes on top of £74 million already committed for large transport projects. The Deal will see at least £84.1 million invested in the SELEP area next year, supporting the delivery of up to 35,000 jobs and 18,000 new homes and over £100 million in private investment over the 6 year period. For Kent the funding allocation is £104 million which was won by the Kent & Medway Economic Partnership – the local arm of the SELEP.

1.3.4 The government asked all LEPs as part of their Growth Deal to sign up to working with

them to develop a single assurance framework covering all Government funding flowing through LEPs, to ensure all LEPs have robust value for money processes in place. The purpose of this LEP assurance framework is to support the developing confidence in delegating funding from central budgets and programmes via a single pot mechanism. As part of their Growth Deal, LEPs will be expected to use this national framework to inform how they work locally, which must be set out in their own local assurance framework.

1.3.5 It is important that all LEPs have robust arrangements in place to ensure value for money and effective delivery, through strong project development, project and options appraisal, prioritisation, and business case development.

1.3.6 The methodology used to assess value for money and the degree of detail to which business cases are developed in support of particular projects or programmes should be proportionate to the funding allocated and in line with established Government guidance including the HM Treasury Green Book. Typically the Government expect business cases to address, in a proportionate manner, the 5 cases set out in supplementary guidance to the Green Book.

1.4 Purpose of this Document

1.4.1 This report follows the 5 case model guidance issued by DfT for Business Case preparation. The intention of the report is to provide robust evidence to SELEP of the merits of introducing the A226 London Road/ B255 St Clements Way junction improvement.

1.4.2 This report is structured in accordance with the Department for Transport's guidance on Transport Business Case, which was updated in January 2013. Following this Introduction, the remainder of the document is structured as follows:

- Chapter 2 provides a description of the scheme design;
- Chapter 3 states the Strategic Case;
- Chapter 4 presents the Economic Case including the Value for Money Statement
- Chapter 5 outlines the Financial Case;
- Chapter 6 details the Commercial Case;
- Chapter 7 provides the Management Case; and
- Chapter 8 offers conclusions and recommendations.

2 A226 London Road/ B255 St Clements Way Junction Improvement

2.1 Introduction

2.1.1 The proposed scheme is located at the junction of the A226 London Road and B255 St Clements Way to the north of Bluewater Shopping Centre in the Borough of Dartford. Greenhithe railway station and bus interchange is located to the north of the site, accessed from the A206 Crossways Boulevard/ Station Road roundabout.

2.2 Scheme Description

2.2.1 In this heavily constrained location the preferred scheme option involves replacing the existing 4 arm standard roundabout with an oversized oval roundabout. It does not require land take from the neighbouring private properties; however, a Section 106 agreement has secured land from the St Clements Lake development situated on the south west corner of the scheme. KCC owned land bordering King Edward Road, which runs alongside the A206 northern arm of this junction, has also been obtained. The proposed scheme layout can be found in **Appendix A.**

2.2.2 The A206 northbound arm will increase the existing two exit lanes to three exit lanes, with the offside lane being a bus only lane. This additional bus lane will continue northwards all the way to the A206 Crossways Boulevard/ Station Road roundabout. Here, buses will be able to turn right into Greenhithe railway station bus interchange.

2.2.3 In addition to the northbound bus lane, a southbound bus lane will be provided on the A206 north of the St Clements Way junction. This lane will begin approximately 20 metres south of the A206 Crossways Boulevard junction and continue south to approximately 20 metres north of the St Clements Way junction. The bus lanes here will complement the existing bus lanes on the B255 St Clements Way south of the junction to its junction with Bluewater Parkway.

2.2.4 Steele Avenue and Riverview Road will remain 'Left In/ Left Out' only junctions and the Toucan crossing here will be retained.

2.2.5 In addition to the junction and carriageway improvements at the St Clements Way roundabout, the scheme will also seek to improve conditions for non-motorised users. The shared cycle/ footway between Greenhithe station and London Road East will be maintained and improved with an enhanced crossing at Riverview Road. The short

length of segregated cycleway adjacent to McDonalds will be replaced by a shared facility linking the existing network to the crossing on St Clements Way southern arm. A further improvement will be the link from this crossing heading to the London Road western arm. As part of the wider cycling strategy the route from St Clements Way to Bluewater will be improved.

3 Strategic Case

3.1 Introduction

3.1.1 This section sets out the 'case for change', by explaining the rationale for making investment and presenting evidence on the strategic policy fit of the proposed scheme. This section also sets out the scheme options under consideration.

3.1.2 The Strategic Case establishes the:

- Context for the business case, outlining the strategic aims and responsibilities of Kent County Council (KCC);
- Transport-related problems that have been identified, using evidence to justify intervention and examining the impact of not making the investment;
- Specific, Measurable, Achievable, Realistic and Time-bound (SMART) objectives that solve the problem, identified through alignment with KCC's strategic aims and responsibilities;
- Measures for determining successful delivery of the objectives;
- Scheme scope, determining what the project will and will not deliver;
- Analysis of constraints and opportunities for investment;
- Breakdown of interdependencies on which the successful delivery of the scheme depends;
- Details of main stakeholder(s); and
- Evaluation of the options considered.

3.2 Strategic Context

National Transport Priorities

National Planning Policy Framework

3.2.1 The National Planning Policy Framework [NPPF], March 2012, sets out the government's planning policy and its expectations for the application of this. Overall, the policy makes a presumption in favour of sustainable development.

3.2.2 Paragraph 17 of the document identifies that it aims to:

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

3.2.3 Expanding on this, paragraph 32 states that plans and decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all people;
- Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development; and
- The development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

National Infrastructure Plan

3.2.4 The Government has long-term objectives aimed at improving the economy, environment and society. These are the three tenets against which major transport infrastructure projects are assessed, and will continue to be assessed in future.

3.2.5 In its National Infrastructure Plan (NIP) 2014, the Government presented its vision for growth and how infrastructure; "Has a significant positive effect on output, productivity and growth rates and is a key driver of jobs throughout the economy";

3.2.6 The vision for the UK's transport system in the NIP is set out below;

- Transport infrastructure can have a significant and positive effect on economic growth and can be a key driver of jobs throughout the economy via enhancing connectivity between businesses, goods and people and by encouraging a sustainable, low-carbon economy that is vital for future success and development;
- Local transport systems are crucial to the overall transport system and must facilitate the growth of suburban areas. The transport network must allow for people to move freely and easily helping to support jobs and growth;
- The transport system must adapt to unexpected pressures allowing for the rapid movement of goods and people, adding value to the economy.

3.2.7 The overarching aim is to create a road network fit for the 21st century, which

improves economic productivity and supports jobs and growth. The network should seek to increase capacity, tackle congestion, support development, strengthen connectivity, improve reliability and resilience, and be of the best possible quality.

Regional Transport Priorities

Unlocking Kent's Potential

3.2.8 KCC's framework for regeneration 'Unlocking Kent's Potential' (2009) defines the vision for Kent and what the county should look like over the next 17 years to 2026. The framework focuses on economic growth but other factors such as an efficient transport system that supports the economy and residents.

3.2.9 Kent is South East England's fastest recovering region and has great potential for successful economic growth. In the last 20 years, Kent has seen 100,000 more people living in the county, housing stock increase by over 60,000 homes and 130,000 more cars on the roads. This pace of change is set to accelerate further over the next 20 years with a projected 8 per cent population increase, accompanied by the presence of two of the UK's four Growth Areas in Thames Gateway and Ashford. Local growth is predicted to result in 250,000 extra journeys being undertaken on Kent's road network by 2026. Coupled with a forecast increase in international traffic it is clear that tackling congestion is regarded as one of the main priorities for Kent.

3.2.10 The regeneration framework has five priorities based on the key challenges and opportunities facing Kent, including:

- Delivering growth without transport gridlock – as the UK's gateway between London and mainland Europe, there is a need to ensure that the county can maintain efficient transport systems at the same time as enabling population and economic growth;
- Building homes and communities, not estates – ensuring new housing is developed to excellent standards, with the infrastructure that it needs to support it;
- Delivering transport and broadband infrastructure to unlock growth;
- Backing business expansion through better assess to finance and support; and
- Delivering the skills that the local economy needs.

Growth without Gridlock

3.2.11 Growth without Gridlock is the delivery plan for transport investment in Kent, published

in 2010. It sets out the priorities for transport investment and how these will be delivered in order to meet the current and future demands of the County in the context of its crucial role in the UK and European economy. The Plan highlights that the A226 London Road/ B255 St Clements Way junction capacity improvement is one of the Strategic Transport Infrastructure Package Schemes (STIPS) as a result of the identification of future congestion hotspots due to the major development planned for the area over the next 20 years.

3.2.12 The overarching goal of Growth without Gridlock is to enable growth and prosperity for Kent and the UK as a whole. Although predating the South-East LEP Strategic Economic Plan, the key elements of both are entirely in accord.

3.2.13 The Plan states that: *"the private car will continue to remain the most popular and dominant form of transport for our residents and these expectations and demands increase pressure on our transport network, on our environment and on us as individuals. This reliance is also the reason why our road network is congested and in response our vision is to create a high quality integrated network which will create opportunities for real transport choice as well as enabling economic growth and regeneration".* Some of the key transport challenges identified by the Plan are:

- Tackling congestion hotspots;
- Transferring existing and new car trips onto public transport, walking and cycling, especially for short journeys;
- Providing sufficient transport infrastructure to mitigate the impact of planned development.

<u>Growth Deal and Strategic Economic Plan</u>

3.2.14 In March 2014, the SELEP submitted their Strategic Economic Plan (SEP). The SEP outlines the vision and investment strategy to drive growth in the economy to 2021. The SEP outlines the case for necessary investment to infrastructure enterprise and employment that is required for the South East region's economy to continue its successful upward trajectory.

3.2.15 Kent is South East England's fastest recovering region and has potential for successful economic growth. Over the last 20 years Kent has seen 100,000 more people living in the county, housing stock increase by over 60,000 homes and 130,000 more cars on the road. The pace of change is set to accelerate further over the next 20 years with a projected 8% population increase.

3.2.16 A component element on the SEP for the area is the Kent and Medway Growth Deal and sets out the plans for the public and private sectors to invest over £80 million each year for the next six years to unlock potential through:

- Substantially increasing the delivery of housing and commercial developments;
- Delivering transport and broadband infrastructure to unlock growth;
- Backing business expansion through better access to finance and support; and
- Delivering the skills that the local economy needs.

3.2.17 The A226 London Road/ B255 St Clements Way junction improvement is listed in the Plan as one of the key transport investments in the Kent Thames Gateway.

Local Transport Priorities

Local Transport Plan for Kent 2011-2016

3.2.18 Kent's third 'Local Transport Plan (LTP3), 2011-2016' sets out KCC's strategy and implementation plans for local transport investment in the short term. The plan proposes a new approach to prioritising investment in transport infrastructure in order to support housing and employment in Kent's growth areas and growth points, improve access to jobs and services, make Kent a safer and healthier county (in particular in disadvantaged areas), and cut carbon emissions. The plan prioritises its planned measures under five themes:

- Growth without Gridlock;
- A Safer and Healthier County;
- Supporting Independence;
- Tackling a Changing Climate; and
- Enjoying Life in Kent.

3.2.19 Under each theme, the plan prioritises a range of transport initiatives and the principles and policies underlying them, by area and by mode. Whilst some of the initiatives have already been put in place or are in progress, a number provide the basis for the proposals prioritised by the SELEP for capital investment support. These initiatives have also subsequently been aligned with the local area development and regeneration plan produced or in the process of being produced by the 12 District or Borough Councils in the County.

3.2.20 The A226 London Road/ B255 St Clements Way Junction Capacity Improvement

scheme is directly identified within LTP3 as major transport proposal in Dartford and Gravesham that will support the growth within this region.

Kent Thameside

3.2.21 Kent Thameside (KTS) is the area formed by Dartford Borough Council and its neighbouring district Gravesham. It forms part of Thames Gateway (Kent), within the wider Thames Gateway. Kent Thameside is centred on Bluewater Shopping Centre, and includes Dartford, Gravesend, Northfleet and Swanscombe; as well as Ebbsfleet International Station.

3.2.22 Kent Thameside is one of the UK's four growth areas. Large levels of growth are proposed for this area of Kent and in order to support this growth a number of transport infrastructure schemes have been identified (the St Clements Way junction improvement scheme is one of them). These formed part of the Strategic Transport Infrastructure Programme.

The Strategic Transport Infrastructure Programme – Part of Dartford's Local Development Framework

3.2.23 The Strategic Transport Infrastructure Plan (STIP), published in February 2011, is a programme of transport schemes, identified by DBC and its partners, to support and enable the planned development across Kent Thameside. "The key features of the STIP are:

- A transport investment programme which addresses the cumulative impact of developments taken together, based on a once-and-for-all assessment;
- The cost of implementing the programme to be met from a pooled fund of public and private sector contributions administered by Kent Council, as the highways authority;
- Developer contributions to the programme to be equitably apportioned, whether by a set metric or by reference to impact assessments;
- Schemes in the programme to be delivered in step with development;
- Legally binding obligations between the partners, providing a reliable delivery framework;
- Formal monitoring and review arrangements.

3.2.24 The STIP was produced to support Dartford's Core Strategy Submission document, in particular, Policy CS 16: Transport Investment.

Policy CS 16: Transport Investment states "the Council will:

- Work with its partners to deliver a Strategic Infrastructure Programme to ensure that the transport network operates at acceptable levels and that the transport infrastructure is in place to support new development. The Programme will be kept under review to ensure it meets its objectives."

3.2.25 The A226 London Road/ B255 St Clements Way junction, along with 10 other schemes, is identified in Appendix C: Kent Thameside Strategic Transport Programme: An Initial Programme for Delivery as a key transport infrastructure improvement to enable significant levels of growth across the Kent Thameside area bringing about economic regeneration. The improvement schemes will work together and begin to address the impact of the new development in the area.

3.2.26 The STIP document also recognises the importance of improvements to public transport and walking and cycling infrastructure across the Kent Thameside area in delivering the proposed development located here. Dartford's existing road network is already operating at close to maximum capacity during peak periods. If this growth is to be delivered without creating gridlock, the bus services across the area, particularly Fastrack, will be a vital part of the transport network. The A226 London Road/ B255 St Clements Way junction improvement scheme incorporates additional bus lanes on its northern arm in order to provide priority for these services (and other local routes) between Bluewater and Greenhithe Railway Station.

3.2.27 Fastrack is a Bus Rapid Transit (BRT) system developed in Kent Thameside in order to support the proposed development across the area. The first of the Fastrack network was introduced in 2006/07 and its aim is to provide a frequent and reliable bus service with as much dedicated 'track' and priority at junctions as possible, and, with future service extensions, will serve all of the major towns and developments.

3.3 Problem Identified

3.3.1 This section of the report will outline the existing problems encountered at the A226 London Road/ B255 St Clements Way junction and provide evidence as to why the scheme is required.

Existing Situation

3.3.2 As part of the junction assessment summary report, the existing traffic conditions at the A226 London Road/ B255 St Clements Way junction have been captured through

the collection of traffic surveys. Junction turning counts and queue length surveys were carried out on Wednesday 22nd April 2015 (07:00-19:00) and Saturday 9th May 2015 (10:00-14:00).

Traffic Flows

3.3.3 The B255 St Clements Way carries an average two way 12 hour traffic flow of nearly 21,500 vehicles and a PM peak flow of nearly 2,500 vehicles per hour. Throughout the day, around 1,600 vehicles per hour use this route (Figure 3-1). The PM peak flows are higher than the AM peak flows.

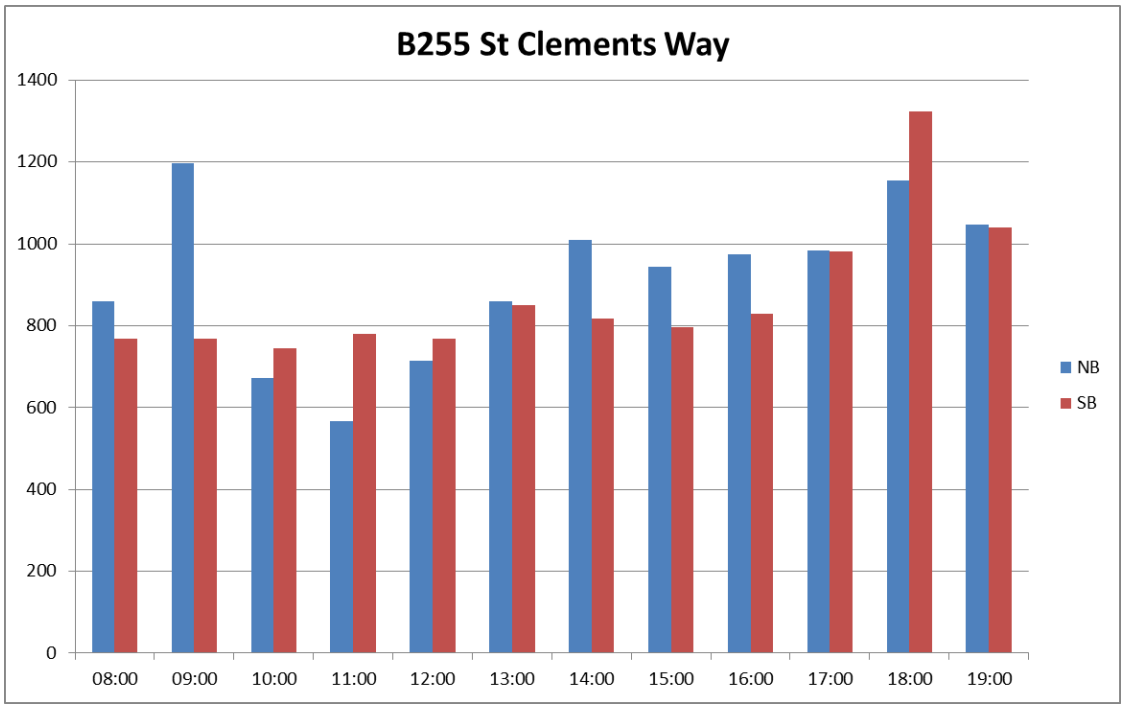

Figure 3-1: B255 12 Hour Traffic Flows (2015)

3.3.4 An initial analysis of the data identified the highway peaks at the junction as follows:

- Weekday AM 07:45-08:45
- Weekday PM 17:00-18:00
- Saturday 12:45-13:45

3.3.5 The peak hour turning movements are summarised in Figure 3-22 to Figure 3-4.

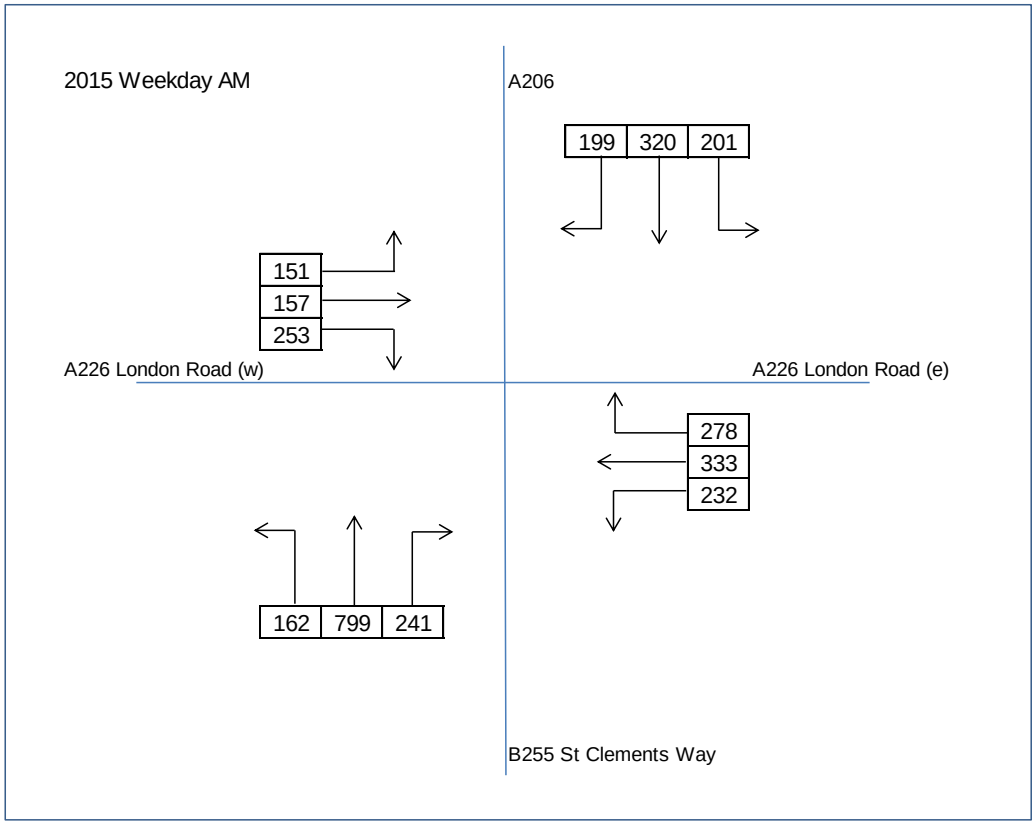

Figure 3-2: AM Peak Turning Movements

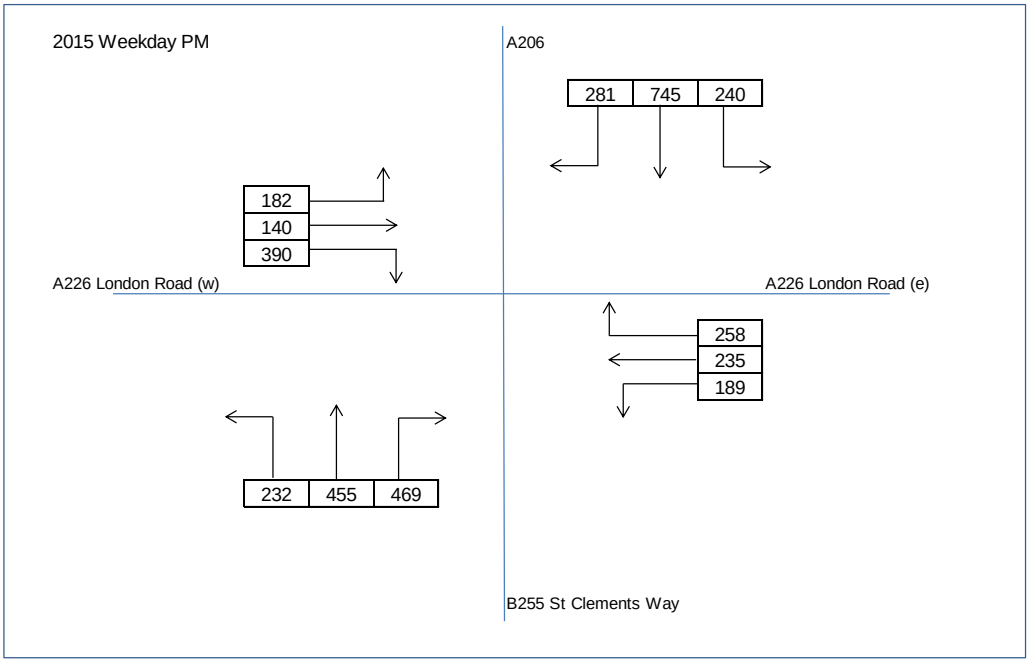

Figure 3-3: PM Peak Turning Movements

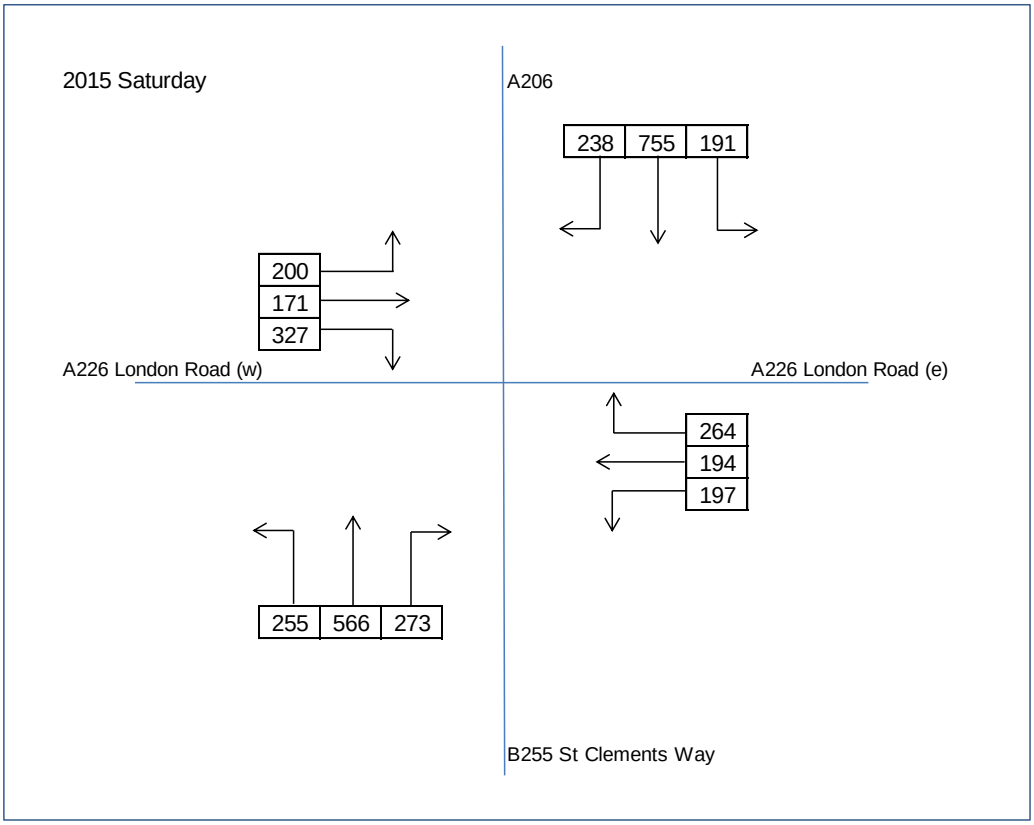

Figure 3-4: Saturday Peak Turning Movements

Queue Length

3.3.6 Longer queues were recorded during the PM peak and the longest queue was 260 metres, recorded on the A226 London Road (w) in the nearside lane. Queue lengths on this arm are displayed in Figure 3-5. In the AM peak, the maximum queue is lower at 180 metres during one 5-minute interval, with all other interval queues at less than 100 metres.

3.3.7 The maximum queue for the A206 was 250 metres (Figure 3-6) in the PM peak. Observed queues in the AM peak were significantly lower than in the PM peak, apart from one 5-minute interval when queues reached for 100 metres in the nearside lane. Queueing in the PM was much more sustained, particularly between 17:00 and 18:00, when queues in both lanes reached around 200 metres for 25 minutes of the hour.

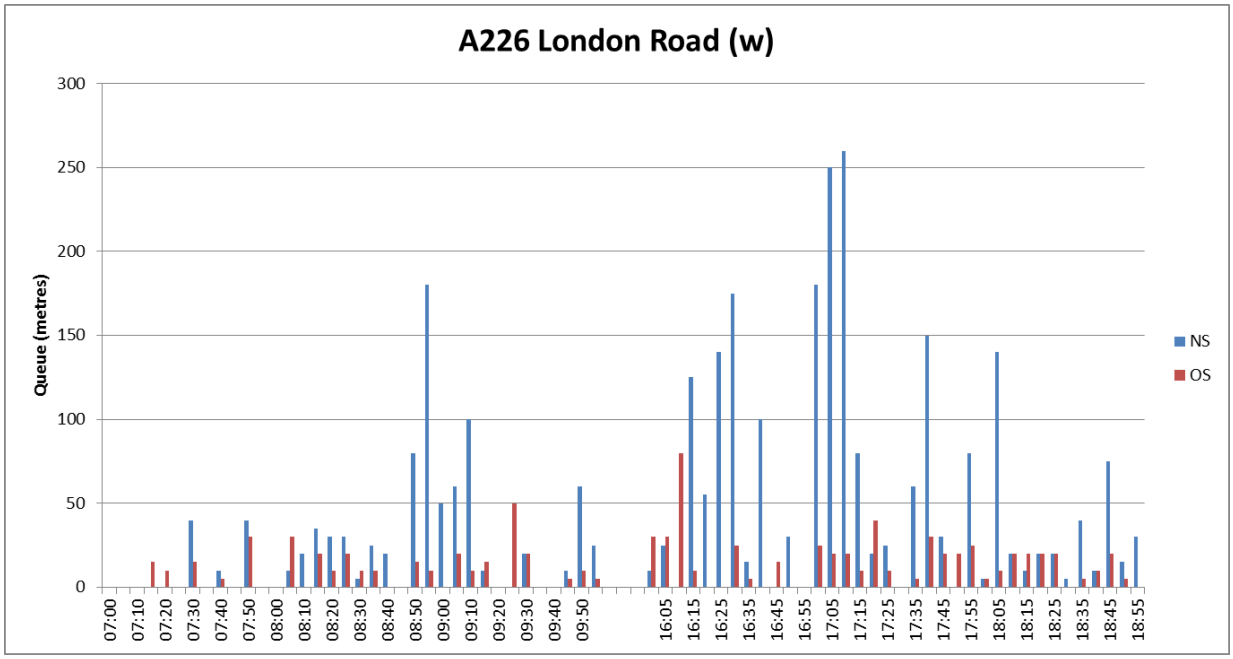

Figure 3-5: A226 London Road (w) - Queue length

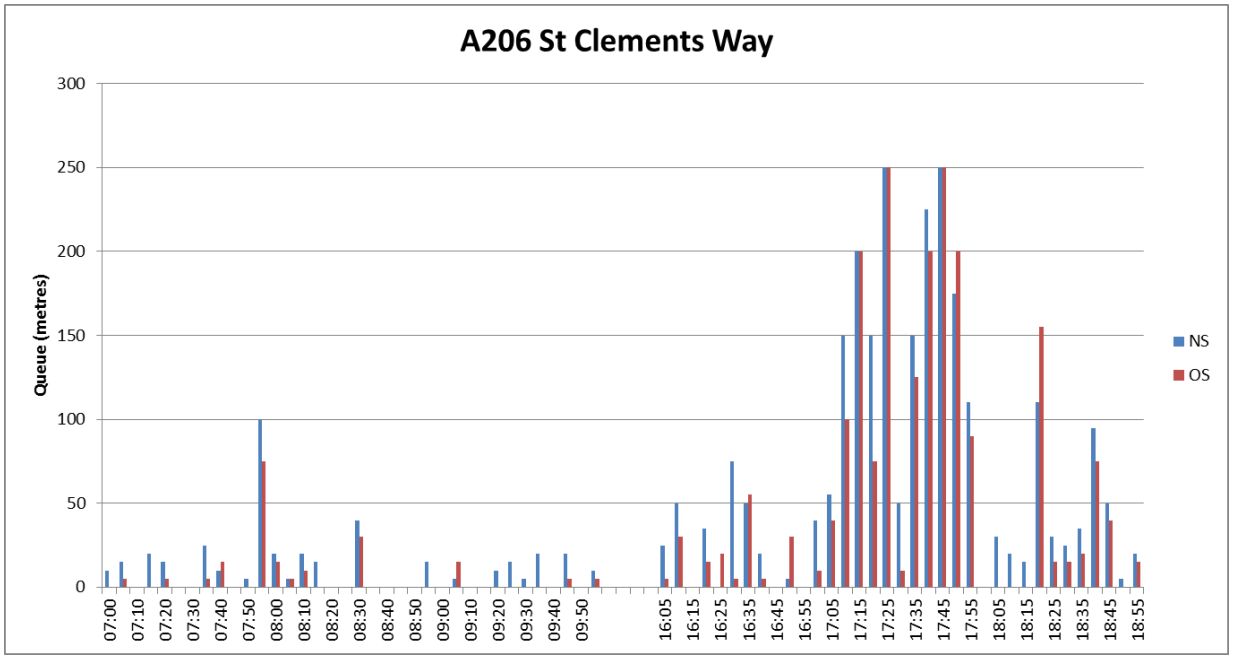

Figure 3-6: A206 St Clements Way – Queue Length

3.3.8 Observed queues on both A226 London Road (e) (Figure 3-7) and B255 St Clements Way (Figure 3-8) were lower than the other two arms of this junction. The A226 London Road (e) saw the majority of queueing in the nearside lane, reaching a maximum of 200 metres in the AM peak and 150 metres in the PM peak. There was generally more queueing in the PM peak.

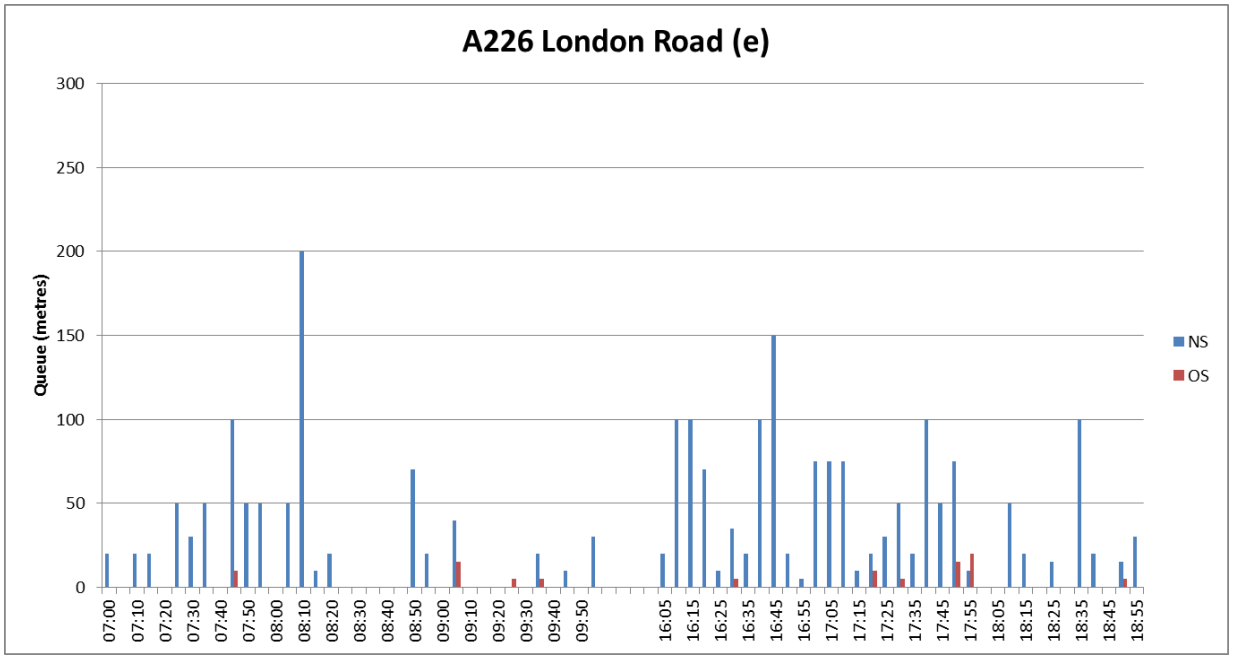

Figure 3-7: A226 London Road (e) – Queue Length

3.3.9 On B255 St Clements Way queueing reached over 50 metres once in the AM peak and once in the PM, both in the middle lane. As on the other arms of this junction, there was more queueing observed in the PM.

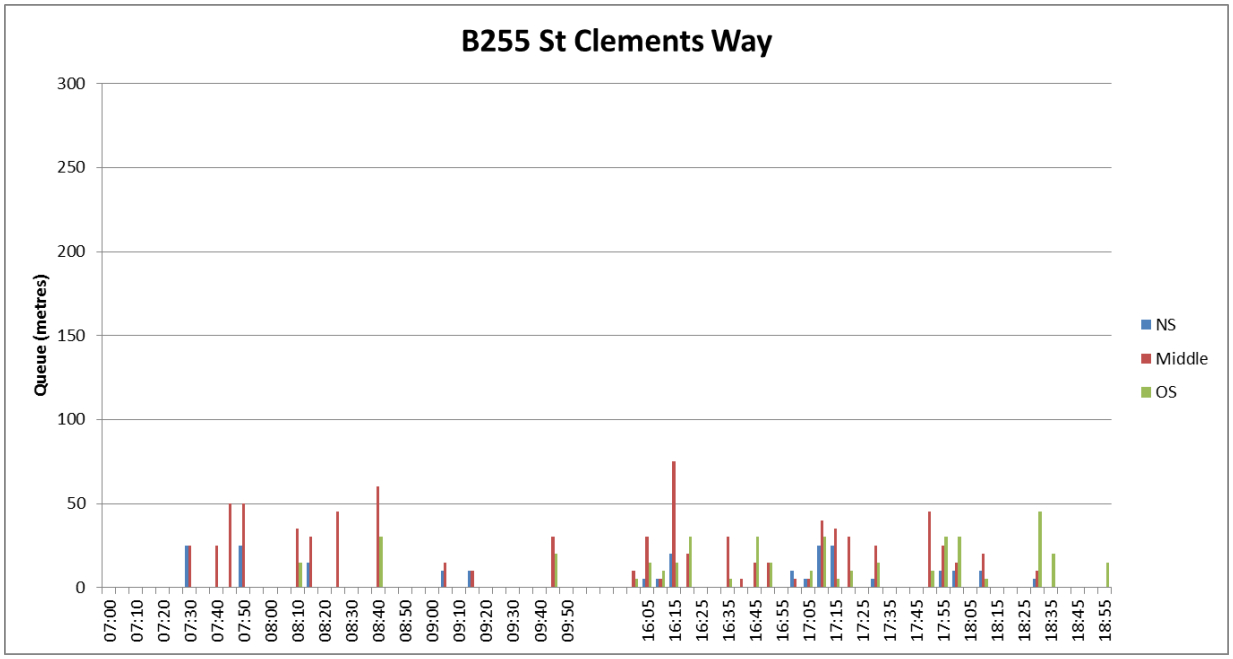

Figure 3-8: B255 St Clements Way – Queue Length

Air Quality

3.3.10 The A226 London Road/ B255 St Clements Way roundabout junction falls within Dartford's Air Quality Management Area (AQMA) 2. The AQMA2 encompasses the length of A226 London Road in Dartford.

3.3.11 The latest available 'Kent and Medway Air Quality Monitoring Network – Annual Report 2015' shows that the Dartford St Clements roadside monitoring site measured an annual mean Nitrogen Dioxide (NO_2) level of 50 μgm^{-3} in 2015 compared with the national objective of 40 μgm^{-3}.

3.4 Impact of No Change

3.4.1 Growing the local and regional economy through the creation of employment opportunities and providing new housing are key drivers identified by the Government, the SELEP and KCC.

3.4.2 The A226 London Road is a key route between the urban centres of Gravesend and Dartford and the significant growth planned for the Kent Thameside area would put the St Clements Way junction under significant additional pressure. The following section identifies the growth planned for this area and the impact of this growth on the junction.

Kent Thameside Growth Area

3.4.3 Kent Thameside is one of the UK's four growth areas. The key developments planned in the Kent Thameside area are:

- Ebbsfleet Valley - 500,000 sqm of mixed use development;
- Ebbsfleet Garden City - 15,000 residential units in the initial phase;
- Dartford Northern Gateway - mixed use development with 2,000 residential units and 1,200 new jobs;
- Eastern Quarry - 6,000 residential units;
- Dartford Town Centre - town centre rejuvenation with 1,000 residential units and 300 new jobs;
- Crossways Business Park in Dartford - 3 million sq. ft of offices, warehousing and industrial units;
- Northfleet Embankment - mixed use development with around 1,000 residential units and 1,500 new jobs;

- Bluewater Shopping Centre extension - redevelopment of West Village to accommodate 30,500 sqm retail space;
- Paramount Park on Swanscombe Peninsula - leisure resort with potential of 27,000 jobs; and
- Rejuvenation of Gravesend Town Centre - 890 new homes and 700 new jobs.

3.4.4 An additional 17,000 homes are planned in Dartford up to 2026, which will increase the Borough's population by over 40%. New communities will be created in the Ebbsfleet to Stone corridor, on the Thames waterfront and in Dartford town centre. One of the largest of these will be at Eastern Quarry, where more than 6,000 homes will be built.

3.4.5 The delivery of approximately 9,000 new homes is expected in Gravesham up to 2026. Key development sites include Gravesend town centre, Canal Basin and Northfleet Embankment. Ebbsfleet International Station is located in the west of the Borough and will form the focus of a major mixed use development. This will include a business district which will create up to 20,000 new jobs.

3.4.6 The level of development planned within the Kent Thameside area will put extraordinary strain on the highway network unless suitable mitigation is implemented. In order to test the expected level of development on the existing network, a junction modelling exercise, as part of the feasibility study, has taken place to understand the impact on the existing and proposed junction alignments.

Future Junction Capacity

3.4.7 Forecast junction capacity assessments have been undertaken in order to provide a comparison of the operation of the junction both with and without the proposed scheme. The assessments have been carried out in ARCADY industry standard software for the weekday AM and PM highway peak hours for the intended year of opening (2020) and a horizon year (2035).

3.4.8 The key outputs from the assessments in the form of Ratio of Flow/Capacity (RFC) and maximum queue length in vehicles (Max Q) are summarised in Table 3-1 overleaf.

Arm	Existing Roundabout				Preferred Option - Enlarged Roundabout			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
Year of Opening (2020)								
A206 St Clements Way (N)	0.46	0.9	0.92	10.1	0.41	1	0.85	5
A226 London Rd (E)	0.83	4.5	1.04	26.8	0.73	3	0.91	8
B255 St Clements Way (S)	0.61	1.5	0.56	1.3	0.55	1	0.52	1
A226 London Rd (W)	0.90	7.1	0.97	14.9	0.60	2	0.69	2
Horizon Year (2035)								
A206 St Clements Way (N)	0.59	1.4	1.23	206.0	0.57	1	1.25	216
A226 London Rd (E)	1.14	92.1	1.34	202.4	1.07	55	1.30	171
B255 St Clements Way (S)	0.85	5.3	0.73	2.7	0.78	3	0.68	2
A226 London Rd (W)	1.76	220.7	1.64	262.3	1.06	25	1.09	58

Table 3-1: Junction Capacity Assessment – Output Summary

3.4.9 The above table indicates that the existing junction arrangement is forecast to operate at or close to full capacity on three of four arms in the PM peak in 2020. By 2035 the existing junction arrangement is forecast to operate significantly over capacity during both the AM and PM peaks; and in particular on the A226 London Rd arms.

3.4.10 Although over capacity in 2035, the preferred option presents the best overall balance throughout the junction. In particular the proposal is forecast to improve the operation of the A226 London Rd (W) arm of the junction significantly when compared to the existing arrangement.

3.4.11 This scheme is intended to work alongside other transport infrastructure projects planned across the Kent Thameside area as part of the significant development occurring here. This junction assessment has been carried out on the St Clements Way junction in isolation and does not take into account other transport infrastructure

improvements which will be in place as a result of the development in the area. In addition to smaller scale local schemes, it is likely that the Lower Thames Crossing will have some impact on the transport patterns in and around Kent Thameside also and should also contribute to relieving pressure on junctions within the area.

3.5 Internal Drivers for Change

3.5.1 A key delivery strand of 21st Century Kent—Unlocking Kent's Potential, "Growth Without Gridlock" outlines how economic growth and regeneration can be delivered in a sustainable manner and also details the infrastructure required to deliver an integrated transport network which is fit for purpose in the 21st Century. If Kent is to accommodate this growth, its transport network must have sufficient capacity and resilience to provide for efficient and reliable journeys.

3.6 External Drivers for Change

3.6.1 Journey time reliability and congestion are the primary drivers and the planned growth of housing and jobs across the South East will exacerbate the existing problems. Whilst KCC has the power and ability to control what happens within its boundaries, it cannot be accountable for development elsewhere in the South East and beyond which may have repercussions within its boundaries

3.7 Objectives

3.7.1 The objectives of the scheme align with both local and national strategic aims. The main purpose of the scheme is to increase the capacity of the junction to ease congestion along the A226 and B255 routes through Greenhithe and enable future growth and redevelopment of the Dartford, Gravesham and wider Kent Thameside area.

3.7.2 The following are the primary objectives associated with the scheme:

- Objective 1: Increase capacity on the network to accommodate further development;
- Objective 2: Relieve congestion on the A226 and B255 corridor;
- Objective 3: Improve journey times and journey time reliability for all travellers.

3.7.3 Achieving the primary objectives will inevitably lead to a number of secondary objectives being realised although these may not be directly linked. These are likely to

be:

- Improved bus priority around Greenhithe Station and bus interchange, particularly with the extension of Fastrack services in the future;
- Provide improved facilities and connectivity for cyclists and pedestrians; and
- Arrest the deterioration in air quality.

3.7.4 It can be seen that both primary and secondary objectives accord well with the strategic aims of both the local authority and national policy.

3.8 Constraints

3.8.1 The key constraint likely to affect delivery of the scheme is summarised below:

- LGF funding allocation to be granted by SELEP.

3.8.2 The preferred option chosen mitigates a number of common engineering constraints such as planning permission and third party land take where not already agreed.

3.9 Interdependencies

3.9.1 The A226 London Road/ B255 St Clements Way junction is an enabling scheme for significant growth within the Kent Thameside area that would bring about economic regeneration for Dartford, Gravesham and the wider Kent Thameside area. However, itself it is not dependent on any other schemes proceeding before it can go ahead.

3.10 Stakeholders

3.10.1 Key stakeholders have been identified by KCC who will play a key role in ensuring that the scheme can not only be delivered successfully, but also operated and maintained in future. The list of Stakeholders identified by KCC is neither definitive nor exhaustive and will be added to during the transport business case process. The following have been identified at this stage:

- Dartford Borough Council;
- Swanscombe Town Council;
- KCC and DBC Councillors;
- Arriva Buses and other smaller operators;
- Land-use developers;

- South East Local Enterprise Partnership;
- Local residents and businesses
- Emergency Services; and
- Regular users of affected transport facilities (road, bus, walk and cycle).

3.10.2 In addition to these stakeholders, it is anticipated that a number KCC staff will be consulted across a range of departments.

3.11 Scheme Options Considered

3.11.1 A feasibility study was undertaken to determine the Preferred Option for increasing capacity at the A226 London Road/ B255 St Clements Way junction.

3.11.2 KCC have considered alternative solutions to improving the operation of the junction, the options are as follows;

- Option A – Enlarged standard roundabout;
- Option B – Signalised junction;
- Option C (Rev A) – Oversized oval roundabout;
- Option C (Rev B) – Oversized oval roundabout (preferred scheme); and
- Option D – Signalised oversized oval roundabout.

3.11.3 In addition a previous option developed by the Babtie Group in 2003 for a tunnelled underpass suitable for light vehicles only was also reviewed. It was considered, however, that the proposed scheme was not viable in terms of affordability and engineering feasibility.

3.11.4 The design for an oversized oval roundabout was revisited to investigate the capacity when minimising the land take required. The difference in capacity between Option C (Rev A) and Option C (Rev B) was considered negligible and although the junction was over capacity in 2035 this option presented the best overall balance throughout the junction.

3.11.5 The preferred option is an oversized oval roundabout junction, designed to meet current required standards. The key features of the design are:

- 56m ICD and 68m oval length;
- Addition of Fastrack bus lanes north/ south bound on St Clements Way;
- Improvement to Station Road/ Riverview Road cycleway crossing point; and
- Revised layout to minimise land take.

3.11.6 This is the option that has been appraised and is considered to be the best layout which will achieve a balance between the following aims:

- Maximising traffic flow through the junction;
- Providing bus lanes on the A206 St Clements Way (northern arm);
- Minimising noise and air quality impacts on residents surrounding the junction;
- Minimising land take;
- Minimising impact on existing underground pipes and cables; and
- Providing opportunities to increase tree planting and landscape enhancements.

3.12 Summary

3.12.1 As a STIP scheme the A226 London Road/ B255 St Clements Way junction improvement is a critical aspect of the strategic development of Dartford and the wider Kent Thameside area. The scheme has full support of Kent County Council and Dartford Borough Council and is included in the relevant local policy and strategy documents.

4 Economic Case

4.1 Overview

4.1.1 The Economic Case provides evidence of how the scheme is predicted to perform, in relation to its stated objectives, identified problems and targeted outcomes. The Economic Case determines if the proposed scheme is a viable investment, whose strengths outweigh its weaknesses and which provides good value for money.

4.1.2 The predicted scheme appraisal focuses on those aspects of scheme performance that are relevant to the nature of the intervention. However, we do acknowledge the strands of assessment that are required under various pieces of statutory guidance (e.g. DfT WebTAG, VfM Assessment, LSTF; HM Treasury 'Green Book').

4.1.3 The junction improvement scheme is based on junction delays estimated using Arcady to compare the 'with' and 'without' scheme scenarios. These results are available for the AM and PM peaks. The method used was spreadsheet-based, undertaking a TUBA-like calculation for travel delay for vehicle users.

4.1.4 The Arcady summary reports are provided as **Appendix B** and the spreadsheet is provided as **Appendix C**.

4.2 Economic Case Criteria

4.2.1 The economic case for this scheme is focussed on:

- Assessing the direct, localised, economic efficiency benefit of the scheme.
- Qualitative appraisal of wider scheme benefits.
- Assessing the scheme benefits against the scheme costs.

4.2.2 The appraisal criteria and approach for their assessment are shown in Table 4-1.

Table 4-1: Appraisal Criteria for Assessing Scheme Performance

Appraisal Criteria	Direct / Indirect Impact Appraisal	Approach Adopted
Journey time savings	Direct	Arcady modelling with TUBA style calculation of benefits
Improved junction layout and journey perception	Indirect	Qualitative
Wider economic impacts	Indirect	Qualitative

4.3 Assumptions

4.3.1 The economic case has been developed based on the comparison of a 'without scheme' scenario (standard roundabout junction) and the 'with scheme' scenario (proposed enlarged oval roundabout junction).

4.3.2 The scheme assessment is based on a conservative estimate of potential benefits to car users in the peak period only. Additional benefits from off peak periods, for bus users and providers and for pedestrians have not been assessed.

4.3.3 The following assumptions have been made in the development of the economic case;

- Vehicle delay savings extracted from ARCADY, for weekday AM and PM peak hours, have been annualised over 253 days. There is potential for benefits beyond the peak hours but these have not been accounted for.
- Delays estimated are based on 2020 opening year flows and 2035 forecast year flows. Benefits from delay savings are extrapolated for intermediate years.
- 2020 and 2035 forecast flows based on 2015 traffic data and locally adjusted NTM growth.
- Value of time per vehicle and journey purpose proportions are taken from the WebTAG Data Book (Autumn 2015 v1.4). To present a conservative assessment these values are not growthed over time.
- Downstream capacity initially assumed not to be a limiting factor.
- ARCADY is assumed to be a robust tool for this assessment.
- All efforts will be made to minimise the effect of roadworks during construction and these are not included in the assessment. KCC are aware of importance of minimising the impact of roadworks and successfully operate a lane rental scheme to this end.
- Maintenance costs are not included as the broad network stays unchanged.
- Optimism bias of 15% - ('conditional approval' stage) in line with WebTag Unit A1.2 (November 2014). This allows for some safeguards against cost escalation.
- Scheme opening year 2020.
- Appraisal period of 20 years assumed as the benefits of this scheme will become entrenched in the wider benefit stream of other improvements along the corridor in the longer term.

4.4 Scheme Performance

4.4.1 The scheme performance locally is assessed based on predicted travel time savings during the peak periods. No account is made for any travel time savings outside the peak hours. The total vehicle travel time is based on average delay time through the junction per vehicle, provided from Arcady output, and from vehicle turning movements (Table 4-2).

Table 4-2: Peak Hour Vehicle Movements

Year	AM	PM
2015	3323	3760
2020	3748	4241
2035	4865	5505

4.4.2 Table 4-3 summarises the estimated delay per day (total vehicle hours) in the opening year, with and without the scheme, and the net travel time saving per day.

Table 4-3: Localised Scheme Performance –Delay per day (Vehicle Hours)

Scenario	Units	AM	PM	AM + PM
		2020	2020	2020
Existing roundabout	Vehicle hrs	14	50	64
Proposed roundabout	Vehicle hrs	6	16	21
Travel time saving	Vehicle hrs	8	34	43

4.5 Appraisal Summary Table

4.5.1 A qualitative/quantitative assessment of predicted scheme performance against WebTAG appraisal criteria has been completed using an Appraisal Summary Table (AST) – this is attached as **Appendix D.**

4.6 Present Value Outcomes from Economic Appraisal

4.6.1 The present value outcomes of the A226 London Road/ B255 St Clements Way Junction Improvements are set out in Table 4-4, which summarises the Analysis of Monetised Costs and Benefits (AMCB). The costs and benefits are calculated based on the following:

- Scheme cost (2016 prices) – KCC supplied;
- Cost adjusted for risk and optimism bias (2016 prices excl. VAT);
- Risk and optimism bias adjusted cost converted to 2010 prices;
- Discounted Risk and optimism bias adjusted cost in 2010 prices;
- Discounted Risk and optimism bias adjusted cost in 2010 market prices;
- User Benefits (PVB) for the initial BCR are based on vehicle user time savings.

Table 4-4: Summary of Monetised Costs and Benefits (2010 present day values and prices)

Item	Present Value (£000s)
User Present Value Benefit (PVB)	£9,069,873
Capital Present Value Cost (PVC)	£4,500,632
Scheme Net Present Value (NPV) = PVB - PVC	£4,569,241
Scheme Initial Benefit to Cost Ratio (BCR) = PVB / PVC	2.02

4.7 Sensitivity Tests

4.7.1 Sensitivity tests have been carried out to provide a broader understanding of the value for money presented by the A226 London Road/ B255 St Clements Way junction improvement. The initial BCR of 2.02 is based on travel time benefits for vehicle users, no estimate is included for bus user benefits. The sensitivity tests, which address the assumptions made in the calculations of traveller benefits and the estimation of costs, are summarised in Table 4-5.

Table 4-5: Sensitivity Test Summary (2010 present day values and prices)

Item	Present Values (£000s)		
	Initial BCR	**Test 1**	**Test 2**
	PVB based on benefits extrapolated for years between 2020 and 2035	**Scheme Cost increase by 50%**	**Benefits reduce by 50%**
Present Value Benefit (PVB)	£9,069,873	£9,069,873	£3,314,942
Present Value Cost (PVC)	£4,500,632	£8,360,958	£4,500,632
Net Present Value (NPV) = PVB - PVC	£4,569,241	£708,914	-£1,185,690
Benefit to Cost Ratio (BCR) = PVB / PVC	2.02	1.08	0.74

4.8 Adjusted BCR / Value for Money Assessment

4.8.1 The Value for Money (VfM) Assessment of the initial BCR of 2.02 would be 'high' based on the DfT 'Value for Money Assessment: Advice Note for Local Transport Decision Makers'. Sensitivity tests around the scheme costs potentially reduce the initial BCR to 0.74 – 1.08, which would return a VfM assessment of 'poor - low'.

4.8.2 The Value for Money Assessment builds on the initial BCR with the objective of capturing qualitative and quantitative impacts in an adjusted BCR.

4.8.3 The A226 London Road/ B255 St Clements Way junction improvements are expected to contribute to improvements in journey time reliability on these corridors. Journey time reliability benefits for the scheme have not been directly quantified and the adjusted BCR for the Scheme is based on a qualitative assessment.

4.8.4 The impact of the junction improvements on journey time reliability is assumed to be slight, which the DfT 'Value for Money Assessment: Advice Note for Local Transport Decision Makers' suggests may be reflected by a 5% uplift in time savings. A 5% uplift in the benefits from time savings would result in a BCR of 2.14.

4.8.5 The Value for Money Assessment has been summarised in Table 4-6 overleaf.

Table 4-6: Summary of Scheme Value for Money Assessment

Scheme Value for Money (VfM) Summary				
VfM Component	**VfM Assessment Mechanism & Outcome Measurement Method**	**Scope of VfM Component**	**VfM Component Strands**	**VfM Outcome** **Qualitative (See 2nd Column)**
Initial BCR	Quantified BCR, or 5pt Qualitative BCR: ➢ Poor (<1.0) ➢ Low (1.0-1.5) ➢ Medium (1.5-2.0) ➢ High (2.0-4.0) ➢ Very High (>4.0)	Derived from usually-monetised scheme user economic appraisal and cost/benefit analysis	Economic Efficiency (Consumer Users) – Economic Efficiency (Business Users & Providers) – Noise – Local Air Quality – Greenhouse Gases – Journey Quality – Physical Activity – Accidents – Wider Public Finances (Indirect Tax revenues) – Broad Transport Budget –	BCR based on economic efficiency savings only
			Overall	High (2.02)
Adjusted BCR	Quantified adjustment to BCR, or 5pt Qualitative adjustment to BCR: ➢ Poor ➢ Low ➢ Medium ➢ High ➢ Very High	Initial BCR adjusted to allow for sometimes-monetised scheme impacts	Journey Reliability – slight (5% uplift of time benefits) Area Regeneration – Wider economy – Landscape – Non-user option / non-use values –	
			Overall Adjusted	High (2.14)
Qualitative Assessment	7pt Qualitative outcome: ➢ Large Beneficial ➢ Moderate ➢ Slight ➢ Neutral ➢ Slight ➢ Moderate ➢ Large Adverse	Covers rarely-monetised scheme impacts	Townscape – neutral Heritage / Historic Environment – neutral Biodiversity – neutral Water Environment – neutral Security – neutral Access to Services – slight beneficial Affordability – neutral Severance – none	
			Overall	Neutral
Initial VfM Category	4pt Qualitative outcome: ➢ Low ➢ Medium ➢ High ➢ Very High	Aggregate of above VfM components, excluding risk component	Initial BCR – High Adjusted BCR – High Qualitative Assessment – Neutral	
			Overall Initial VfM Category (excluding risk adjustment)	High
Key Risks, Uncertainties & Sensitivities	7pt Qualitative negative or positive adjustment to initial VfM: ➢ Large Beneficial ➢ Moderate ➢ Slight ➢ Neutral ➢ Slight ➢ Moderate ➢ Large Adverse	*Risk around scheme performance, outcome sensitivity, outline capital costs over or under estimated etc.*	Conservative estimate of scheme performance (peak hour savings only) – slight beneficial Chosen option minimises delivery constraints/risks – slight beneficial	
			Overall risk/uncertainty/sensitivity adjustment	Slight beneficial
Final VfM Category	**4pt Qualitative outcome:** ➢ **Low** ➢ **Medium** ➢ **High** ➢ **Very High**	**Aggregate of above VfM components, including risk component**	**Overall Final VfM Category (including risk adjustment)**	**High**

4.9 Overall Value for Money Statement

4.9.1 The initial BCR for the scheme is 2.02. This is based on conservative estimates of travel time benefits in the peak hours only. The improved junction also offers potential for improved journey time reliability for consumer users, business users and providers.

4.9.2 The overall Value for Money category for the A226 London Road/ B255 St Clements Way junction improvements, as a stand-alone element of the wider Kent Thameside transport infrastructure improvements, is considered to be High.

5 Financial Case

5.1 Overview

5.1.1 The Financial Case for the A226 London Road/ B255 St Clements Way junction improvements gives a breakdown of the expected project cost components and the time profile for the transport investment. It considers if these capital costs are affordable from public accounts at the times when the costs will arise. It also identifies where contributions of anticipated funding will be obtained, to meet the scheme costs and it assesses the breakdown of funds between available sources and by year and considers how secure these funds are likely to be. Finally, it reviews the risks associated with the scheme investment and examines possible mitigation.

5.2 Base Costs

5.2.1 Table 5-1 shows that the base cost estimate is £5,727,491. The cost estimate was last reviewed by KCC in September 2016 and is considered by KCC to be robust. The estimates were undertaken by cost consultants Allen Dadswell who are experienced in highway scheme cost estimation. A detailed breakdown is included in **Appendix E**.

Table 5-1: Component of Investment Cost (2016/Q3 prices)

Cost Component	Cost (£m)
Construction	£2.93
Preparation, supervision and administration	£1.83
Utilities	£0.96
Total Scheme Cost	£5.73

5.3 Inflation

5.3.1 The basis of the inflation calculation in this cost plan is the BCIS (Building Cost Information Service), Civil Engineering Cost Index. The BCIS takes account of the actual level of pricing in the construction market and also anticipates trends until 2020.

5.3.2 For fees and KCC costs, an allowance of 6% has been applied up to the start of construction, which represents a small proportion of the overall % applied.

5.3.3 The BCIS Civil Engineering Cost Index % increase from the Base Date of 3Q16 to the mid-point of the works is 10.135%.

5.3.4 The contract period is assumed to be 9 months, therefore, the total allowance for

inflation is estimated to be £635,000.

5.4 Risks / Leverage

5.4.1 The A226 London Road/ St Clements Way junction improvement scheme is dependent on SELEP funding of £4.2 million and funding from local sources. Should scheme costs escalate, delivery will be hindered. The scheme cost estimate includes a 10% allowance for risk.

5.5 Final Scheme Costs

Table 5-2 below indicates the costs associated with the proposed scheme including inflation and risk allowance. The spending profile and quantified risk assessment (QRA) can be found in **Appendix E**.

Table 5-2: Summary of Final Scheme Costs (2016/Q3 prices)

Cost Component	Cost (£m)
Scheme Cost	£5.73
Inflation	£0.64
Risk Allowance	£0.54
Total	£6.90

5.6 Funding Arrangements

5.6.1 Funding for the scheme is sought from SELEP (LGF) with supporting funds from developer funding. The total SELEP contribution sought for the junction improvement is £4.2 million. A breakdown of funding sources for the scheme is summarised in Table 5-3.

Table 5-3: Funding Sources

Funding Sources	£(m)
LGF Funding	£4.20
Developer Contribution	£2.70
Total	£6.90

6 Commercial Case

6.1 Overview

6.1.1 The Commercial Case for the A226 London Road/ B255 St Clements Way junction improvement scheme provides evidence that the proposed investment can be procured, implemented and operated in a viable and sustainable way. The aim is to achieve best value during the process, by engaging with the commercial market

6.2 Expected Outcomes from the Commercial Strategy

6.2.1 The outcomes which the commercial strategy must deliver are to:

- Confirm that procedures are available to procure the scheme successfully;
- Check that available / allocated capital funds will cover contractor and construction costs;
- Verify that risk allowance is sufficient;
- Ensure that arrangements have been made to handle cost overruns.

6.3 Scheme Procurement Strategy

Procurement Options

6.3.2 KCC have identified two procurement options for the delivery of their LEP funded schemes. The alternative options are:

- Full OJEU tender, or
- Delivery through existing Amey Highways Term Maintenance Contract (HTMC).

Full OJEU tender

6.3.3 This option is required for schemes with an estimated construction value of over £4,322,012.

6.3.4 KCC will then need to opt for an 'open' tender, where anyone may submit a tender, or a 'restricted' tender, where a Pre-Qualification is used to whittle down the open market to a pre-determined number of tenderers. This process takes approximately one month and the first part is a 47 day minimum period for KCC to publish a contract notice on the OJEU website.

6.3.5 The minimum tender period is 6 weeks but could be longer for larger schemes. Once the tenders are received they must be assessed and a preferred supplier identified.

There is a mandatory 10 day 'standstill' period, during which unsuccessful tenderers may challenge the intention to award to the preferred contractor.

Delivery through existing Amey Highways Term Maintenance Contract (HTMC)

6.3.6 This option is strictly not procurement as the HTMC is an existing contract. The HTMC is based on a Schedule of Rates agreed at the inception of the contract. The price for each individual scheme is determined by identifying the quantities of each required item into a Bill of Quantities. Amey may price 'star' items if no rate already exists for the required item. If the scope of a specific scheme is different from the item coverage within the HTMC contract a new rate can be negotiated.

Preferred Procurement Option

6.3.7 The preferred procurement route for the A226 London Road/ B255 St Clements Way junction improvements is through full OJEU tender. Although the scheme construction cost is below the threshold for this option, this process is considered best practice.

6.4 Procurement Experience

6.4.1 KCC have a successful track record of procuring major highways projects using the preferred OJEU procurement route that has been identified for the A226 London Rd/B255 St Clements Way scheme.

6.4.2 The procurement of all contracts is managed by the Strategic Sourcing and Procurement Division within Kent County Council. A well-established procurement governance process is in place which ensures consistency across the procurement of all projects and ensures current procurement legislation is adhered to. This includes seeking appropriate approvals for projects through the KCC Strategic Commissioning Board (SCB) and the Commissioning Advisory Board (CAB).

6.4.3 Previous schemes delivered through external OJEU tenders include:

- East Kent Access Phase 2 (2009 to 2012) – Construction Value £70m. Further details of the scheme are given in section 7.
- Sittingbourne North Relief Road (2009 to 2011) Construction Value £19m. Further details of the scheme are given in Section 7.
- Victoria Way, Ashford (2010 to 2011) – Construction Value £10m
- A20 Drovers/M20 Junction 9, Ashford (2010 to 2011) – Construction Value £9.0m

- Poorhole Lane, Westwood (2014 to 2015)– Construction Value £3.2
- North Farm Tunbridge Wells (2014 to 2015) – Construction Value £5.2

6.4.4 Current LEP schemes that have recently been procured through OJEU tenders are:

- Rathmore Road, Gravesend (2016)– Tender Value £3.4m
- M20 Junction 4 (2016) – Tender Value £2.6m
- Maidstone Bridge Gyratory (2016) – Tender Value £2.7m

6.5 Commercial Risk Assessment

Potential for Risk Transfer

6.5.2 Although many of the design risks can only be resolved through rigorous design and review processes, once the design options are clear and the scope of land acquisition, planning requirements, environmental requirements are fully identified; the primary risks will be related to construction. There is potential for transferring these risks through the construction procurement process. This will be explored fully as the design and procurement process progresses.

6.5.3 The Commercial Case for the proposed junction improvement provides evidence that the proposed investment can be procured, implemented and operated in a viable and sustainable way. The aim is to achieve the best value during the procurement process by engaging with the commercial market. The commercial risk assessment is outlined in Table 6-1.

Table 6-1: Commercial Risk Assessment

Qualitative Commercial Risk Assessment										
Scheme Commercial Risk Item	**Likelihood of Risk Arising (✓)**			**Impact Severity (✓)**			**Predicted Effect on Scheme Procurement, Delivery & Operation (✓)**			**Immediate Bearer of Risk and Suggested Mitigation**
	Low	**Medium**	**High**	**Slight**	**Moderate**	**Severe**	**Slight**	**Moderate**	**Severe**	
Scheme construction is delayed and costs increase, owing to unexpected engineering difficulties.		✓				✓		✓		Kent CC, as scheme promoter, bears the risk. Ensure that scheme development, design, procurement and construction procedures are sufficiently robust to minimise likelihood of construction difficulties.
LEP funding not available leading to a shortfall		✓			✓			✓		KCC, as scheme promoter, bears the risk. Ensure that Business Case process is followed and scheme benefits are achievable and realistic.

7 Management Case

7.1 Overview

7.1.1 The Management Case outlines how the proposed scheme and its intended outcomes will be delivered successfully. It gives assurances that the scheme content, programme, resources, impacts, problems, affected groups and decision makers, will all be handled appropriately, to ensure that the scheme is ultimately successful. It also covers monitoring of the scheme.

7.2 Approach to Scheme Development and Delivery

7.2.1 Although not fully defined at this stage, the project is likely to be managed in house by PRINCE2 trained and experienced Kent County Council staff, using a well-established governance structure, which has been successfully applied to deliver other transport improvement schemes.

7.3 Evidence of Previously Successful Scheme Management Strategy

7.3.1 KCC have a successful track record of delivering major transport schemes within the county. The most recent of which were the East Kent Access Phase 2 (EKA2) and Sittingbourne Northern Relief Road schemes (SNRR).

7.3.2 The EKA2 scheme, completed in May 2012, was designed to support economic development, job creation and social regeneration, improving access with high quality connections between the urban centres, transport hubs and development sites in East Kent. The overall objectives of the scheme were to unlock the development potential of the area, attract inward investment and maximise job opportunities for local people. The extent of the scheme is shown in Figure 7-1.

7.3.3 The scheme was successfully delivered within budget and ahead of programme through the adoption of a robust management approach similar to that set out above to deliver the A226 London Road/ B255 St Clements Way junction improvement. The total value of the scheme was £87.0m of which £81.25m was funded by Central Government.

7.3.4 The intended scheme outcomes are currently being monitored but the intended benefits of the scheme are anticipated to be realised.

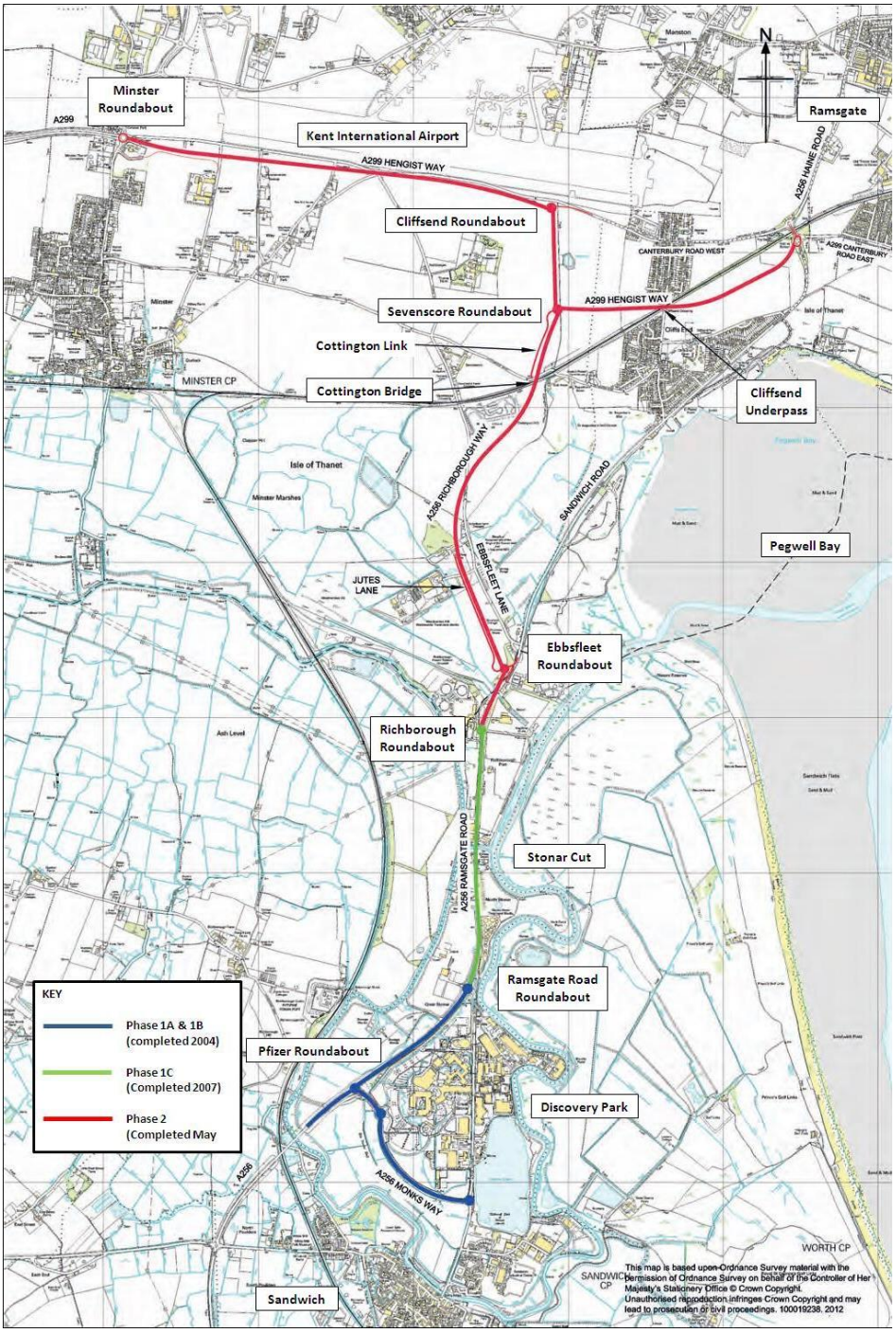

Figure 7-1: EKA2 Scheme Layout

7.3.5 The SNRR scheme, completed in December 2011, was designed to remove the severance caused by Milton Creek and give direct access to the A249 trunk road for existing and new development areas, thereby relieving Sittingbourne town centre.

7.3.6 The delivered scheme is shown in Figure 7-2 overleaf:

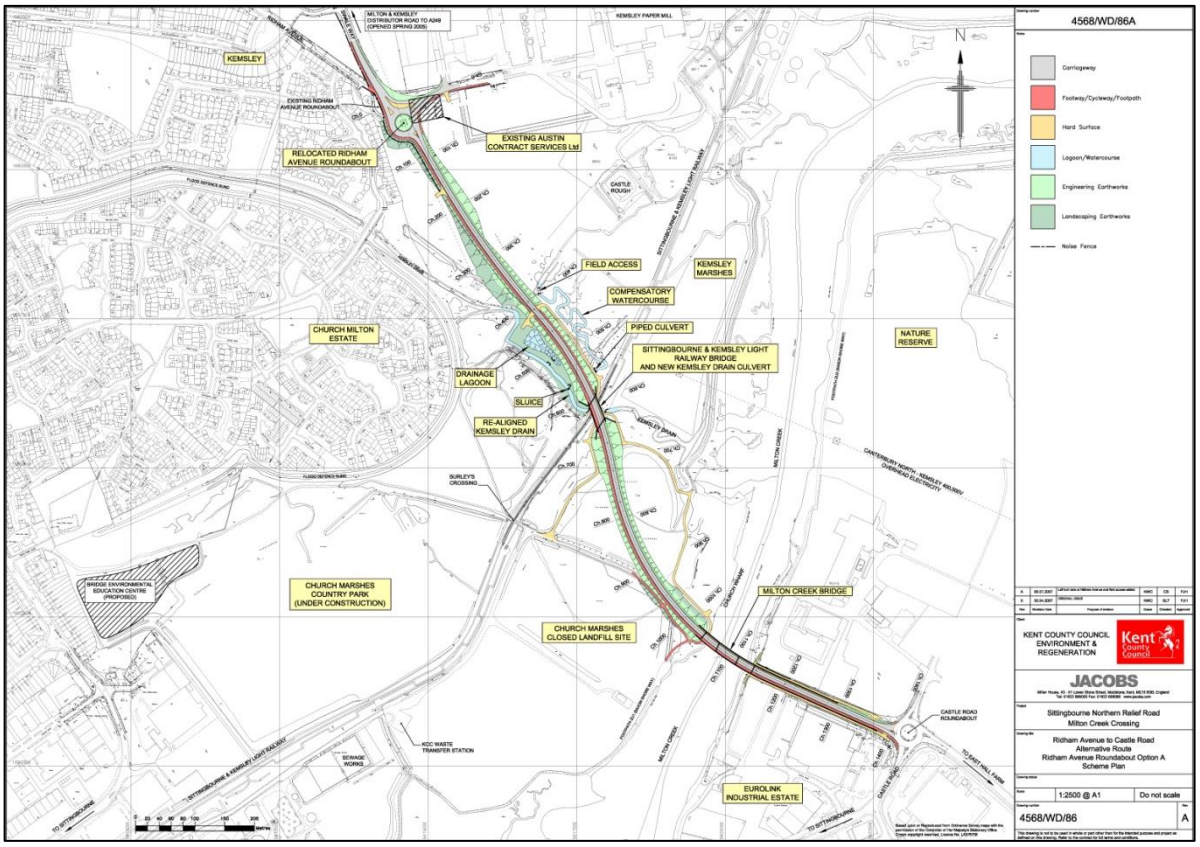

Figure 7-2: SNRR Scheme Layout

7.3.7 The project is an excellent example of multi agencies working towards a common aim. The scheme was funded by the Homes & Communities Agency in its Thames Gateway (Kent) regeneration role, by the Department of Transport in its support of local major schemes and by private sector S106 contributions. The scheme was delivered under budget and to programme.

7.3.8 Both the EKA2 and SNRR schemes have since been awarded regional Institute of Civil Engineers (ICE) Excellence Awards.

7.4 Key Work Stages and Tasks

The key stages identified are:

- Feasibility work
- Land Acquisition
- Consultation
- Committee Approval
- Detailed design / Full Business Case
- Acquisition of statutory powers
- Procurement

- Environmental surveys
- Start/end of construction
- Monitoring

7.5 Project Delivery and Approvals Programme

7.5.1 The construction programme for this scheme is based on the current provisional LEP allocation which means construction will take place in 2019/ 2020.

7.6 Project Governance, Roles and Responsibilities

7.6.1 KCC have set up a clear and robust structure to provide accountability and an effectual decision making process for the management of the LEP funded schemes. Each scheme will have a designated project manager who will be an appropriately trained and experienced member of KCC staff.

7.6.2 Figure 7-3 provides an outline of the overall governance structure implemented to manage the delivery of each scheme.

7.6.3 A detailed breakdown of the meetings (along with the attendees, scope and output of each) which make up the established governance process is set out below.

Project Steering Group (PSG) Meetings

7.6.4 PSG meetings are held fortnightly to discuss individual progress on each scheme and are chaired by KCC Project Managers (PMs). Attendees include representatives from each stage of the LEP scheme (i.e. KCC Bid Team, KCC sponsor, KCC PMs, Amey design team and construction manager). Progress is discussed in technical detail raising any issues or concerns for all to action. A progress report, minutes of meeting and an update on programme dates are provided ahead of the Programme Board (PB) meeting for collation and production of the Highlight Report.

Highlight Report

7.6.5 The Progress Reports sent by the KCC PMs comprise of the following updates; general progress, project finances, issues, risks and governance meeting dates. The Highlight Report identifies any areas of concern or where decisions are required by the PB meeting or higher to the KCC LEP Programme Manager. An agreed version of the Highlight Report is issued to the PB meeting attendees during the meeting.

Programme Board (PB) Meeting

7.6.6 The PB meeting is held monthly and is chaired by the KCC LEP Programme Manager.

Attendees include representatives from all three stages of the schemes (i.e. KCC LEP Management, KCC LEP Bidding, KCC Sponsors, KCC PMs, Amey Account Manager, Amey Technical Advisors, Amey Construction representatives). This meeting discusses project progress to date, drilling into detail if there is an issue or action (as identified in the PSG meeting), financial progress, next steps and actions. Outputs of this meeting are the Highlight Report and the minutes of meeting.

Escalation Report

7.6.7 A list of actions and decisions that the PB meeting was unable to resolve is prepared ready for the Sponsoring Group (SG) meeting to discuss and ultimately resolve.

Sponsoring Group (SG) Meeting

7.6.8 The SG is held monthly and will be chaired by Tim Read (KCC Head of Transportation). Attendees are Barbara Cooper (Corporate Director), Roger Wilkin (Director of Highways, Transportation and Waste), Tim Read and Mary Gillett (KCC Major Projects Planning Manager). This meeting discusses high-level programme progress to date, financial progress, next steps and closes out any actions from the escalation report. Output is sent to Mary Gillett for distribution. Technical advisors are invited if necessary to expand upon an issue. All actions from the start of this meeting cycle are to be closed out by the SG when they meet (i.e. no actions roll over to subsequent meetings).

Bid / Design / Construction	High level Agenda	Frequency	Attendees	Format	Scope	Agenda Items	Key Deliverables/Feedback	Templates
Sponsoring Group	Bid Design Construction	Monthly - Can be called in emergency if required	**Chair: TR** BC/RW/MG Supported by IPM attendees as required	Face to face meeting, rotating venue	To discuss programme (i.e. high level progress/preview next steps and discuss and resolve issues.	LEP programme (high level) progress to date Programme Financial reporting Next steps Issues/Risk/Change Actions	Minutes of Meeting Action/Decision Log Output distributed to MG	**Agenda** **Minutes** **Decision list**
Sponsoring Group Progress Report	Decisions Needed	Monthly	MG/JW	Report	To record outstanding actions/issues that require a decision made by the board		Action list ready for the Steering Group	**Action List**
Programme Board Meeting	Bid Design Construction	Monthly	**Chair: MG** MG/KCC Promoters/KCC PMs/ AQ or RC/SW/PC/JW	Face to face meeting, rotating venue	To discuss progress/preview next steps and discuss and resolve issues	LEP programme progress to date Project financial reporting Next steps Issues/Risk/Change Actions	Minutes of Meeting Action List Output distributed to all attendees	**Agenda** **Minutes**
Highlight Report	Identify key points for Programme Meeting	Monthly	JW/MG	Face to face meeting/report	JW to collate and streamline all reports highlighting areas of interest for the programme meeting. To be fed back to MG by report/meeting		Highlight report for MG to use for Programme Meeting. Highlight report shared with PR attendees.	**Highlight Report**
Steering Group Meeting	Progress Update	Monthly/Fortnightly as required	**Chair: KCC PMs** All input staff - KCC Bidding/KCC Promoters/KCC PMs/Amey Design/TMC/JW	Face to face meeting	Individual meetings per project (including each stage of the LEP process to discuss progress in detail).	LEP project progress to date/MS Programme Project financial reporting Issues/Risk/Change Actions	MS Programme Update Progress update in template for each project	**Progress Report**

List of Initials:

BC	Barbara Cooper
RW	Roger Wilkin
TR	Tim Read
MG	Mary Gillett
AQ	Andrew Quilter
RC	Richard Cowling
SW	Steve Whittaker
PC	Paul Couchman
JW	Joanne Whittaker

Figure 7-3: Governance Diagram

7.7 Communication and Stakeholder Management Strategy

7.7.1 Consultation is a key element in the programme. The approach to the management of the different stakeholders and other interested parties is illustrated in Figure 7-4.

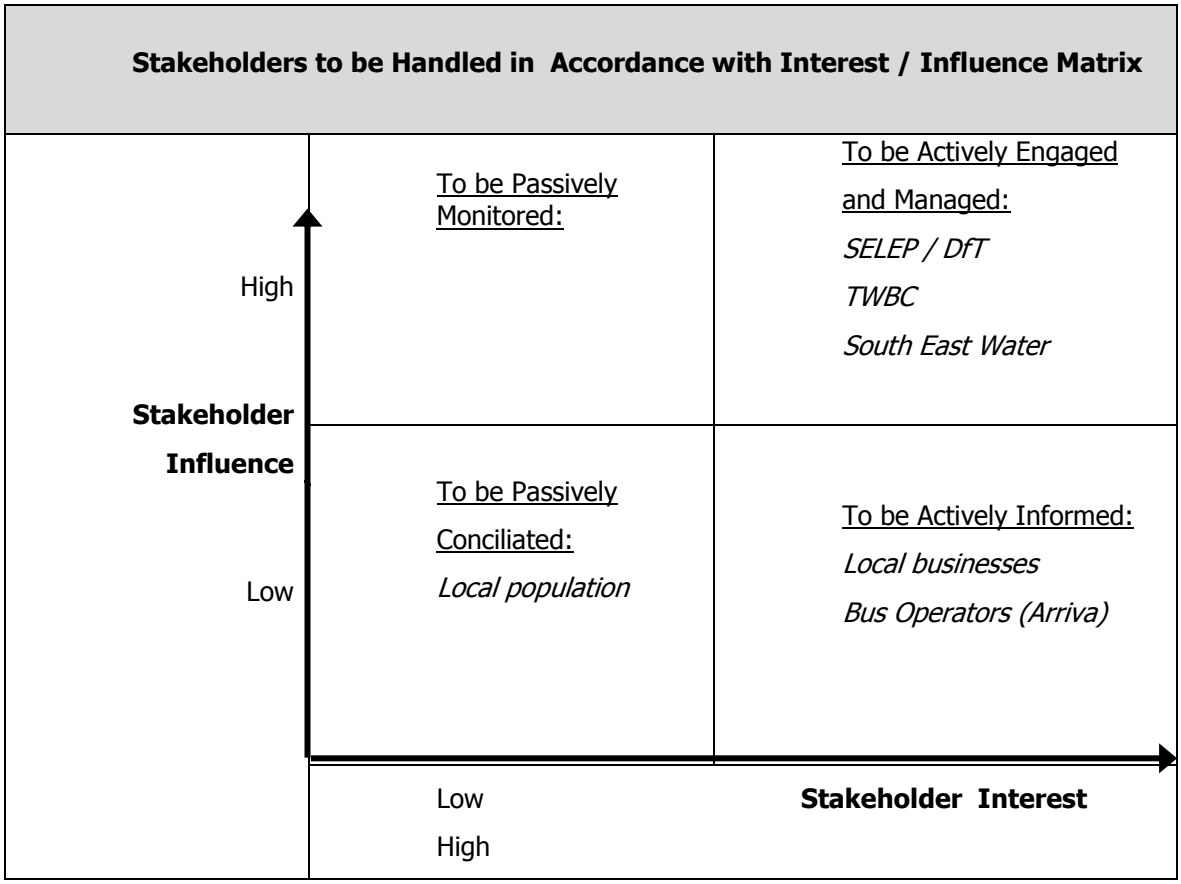

Figure 7-4: Stakeholder Management Plan

7.8 Project Risk Management and Contingency Plan

7.8.1 Project risk is managed as an on-going process as part of the scheme governance structure, as set out in section 7.2 of this report. A scheme risk register is maintained and updated at each of the two-weekly Project Steering Group meetings. Responsibility for the risk register being maintained is held by the KCC PM and is reported as part of the monthly Progress Reports.

7.8.2 Any high residual impact risks are then identified on the highlight report for discussion at the Programme Board (PB) meeting. Required mitigation measures are discussed and agreed at the PB meeting and actioned by the KCC PM as appropriate.

7.8.3 An example scheme risk register is shown in Figure 7-5 overleaf:

Figure 7-5: Example Risk Register

7.8.4 Table 7-1 shows a summary of the project risk assessment. This includes aspects from all elements of the business case, and also adds 'operational' and 'scheme performance' elements.

Table 7-1: Project Risk Assessment

Risk description	Likelihood	Impact	Likelihood x Impact	Mitigation
Increase in scheme Costs	2	3	6	Optimism bias included in assessment
Funds do not cover costs	2	3	6	Lobby alternative sources for any shortfall in funding
Change in policy (from Central Government, LEP, Local Authority)	2	3	6	Ensure co-operation and communication between all concerned parties
Scheme performance (e.g. downstream capacity erodes benefits)	2	3	6	Other improvements planned for the Kent Thameside highway network will mitigate.
Statutory Undertakers	1	4	4	KCC searches conducted as early as practicable to flag up any issues at the earliest opportunity.
Issues emerging during construction (environmental, archaeology etc.)	1	4	4	Early liaison with geotechnical, environmental and archaeological specialists to minimise impact.
Opposition to scheme (residents, cyclists, other road users)	3	2	6	Effective consultation with all relevant consultees providing the fullest possible information.

7.9 Scheme Monitoring

7.9.1 KCC are committed to monitoring, evaluating and reporting the scheme post-opening. Data surveys undertaken before the scheme will be repeated. In addition pre-opening data for Accidents and Air Quality is available and can also be repeated post-opening.

7.9.2 It is important for a congestion relief scheme to compare traffic flows so that the changes in delay are put into context. Table 7-2 shows the scheme monitoring plan.

The acceptability will be judged on the predictions supporting the economic case and on delivering the scheme objectives.

Table 7-2: Scheme Monitoring, Evaluation and Benefits Realisation Plan

Potential Benefit / Impact	Measure	Owner	Review timescale	Review Method
Travel time improvement	Journey times Queues	KCC	One and five year post opening	Traffic Master data Queue surveys
Impact on accidents and safety	Number and type of accidents	KCC	Five year post opening	KCC database
Increased capacity	Traffic flows	KCC	One and five year post opening	ATC data

8 Conclusion

8.1 Summary

8.1.1 The scheme provides an affordable and deliverable scheme that can improve the existing problems of congestion and delay at the junction of the A226 London Road and B255 St Clements Way. The scheme is worthwhile from a 'value for money' standpoint.

8.1.2 As a STIP scheme the A226 London Road/ B255 St Clements Way junction improvement is a critical aspect of the strategic development of Dartford and the wider Kent Thameside area. The scheme has full support of Kent County Council and Dartford Borough Council and is included in the relevant local policy and strategy documents.

8.2 Recommended Next Steps

8.2.1 The development and delivery of the scheme should be approved and should proceed.

8.3 Value for Money Statement

8.3.1 The 'Value for Money' Statement in this report suggests a 'high' value for money. This should be revisited if the scheme costs escalate.

8.4 Funding Recommendation

8.4.1 The £4.2 million for the A226 London Road/ B255 St Clements Way junction improvement scheme should be released from SELEP to KCC.

Appendix A Scheme Layout

Appendix B Arcady Reports

Appendix C BCR Spreadsheet

Appendix D AST

Appendix E Scheme Cost Plan