A27 Station Roundabout and Gudge Heath Lane Junction Improvements, Fareham

FULL BUSINESS CASE
19.5.14

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**A27 Business Case – Appendices**

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1 Introduction

1.1.1 This document presents the business case for funding of the A27 Station Roundabout and Gudge Heath Lane junction improvements in Fareham. It complies with the DfT Guidance on Transport Business Cases and the Solent LTB Assurance Framework.

1.1.2 This scheme will improve two key, adjacent junctions on the A27 near Fareham town centre and railway station. Gudge Heath Lane junction and the Station Roundabout both currently suffer from congestion and limit vehicle movements in the area.

1.1.3 The scheme will provide the opportunity to better manage traffic in this heavily congested area, removing a critical delay point at the start of the A27 Corridor in central Fareham, and will help start to remove transport barriers to economic growth to help reverse the decline of this area. The scheme in its entirety forms just the first Phase of the proposed A27 Corridor Improvements and improvements for Gosport Western Access that will help facilitate a reverse in the current trend of decline in this area.

1.1.4 This Business Case considers the following five cases:

- Strategic
- Economic
- Financial
- Commercial
- Management
2 Strategic Case

2.1 Introduction

2.1.1 In January 2014 a £90m bid was submitted to the Solent Local Enterprise Partnership for a package of measures to improve access to Fareham and Gosport. The package builds upon the first phase of the A27 improvements and includes improvements on the A27 west of Titchfield Gyratory towards Segensworth roundabout as the second phase of planned improvements for the A27. The bid was well received and has been submitted by the Solent LEP, as a priority package forming part of the Strategic Economic Plan forwarded to the Government for funding from 2015/16. The second phase of improvements along the A27 will help add value to the first phase, by removing blockages and helping to keep traffic moving, particularly in peak periods. The A27 improvements are entirely consistent with the overarching objectives to improve access to Fareham and Gosport set out below.

2.1.2 The material presented here builds on that previously presented to the LTB in relation to this scheme, particularly the September 2013 submission for funding. The Solent LEP included this as a priority scheme in the Solent Strategic Economic Plan, published in March 2014.

2.2 Problems Identified

2.2.1 Both Fareham town centre and the Gosport peninsula are built up urban areas in the South East Hampshire linear, coastal environment. The area is dominated by a heavily congested...
transport network and little scope for improvement due to geographical and urban area constraints.

2.2.2 North / south access roads onto and off the peninsula are limited and outbound traffic generally needs to travel along the critical east to west A27 artery through central Fareham.

2.2.3 Alongside the M27 the A27 caters for the majority of east-west movements for both local journeys and journeys to wider south Hampshire. Congestion on the M27 and its associated junctions means that the A27 is heavily used and is performing as a strategic road as well as a local distributor feeding this densely populated residential area. Shorter distance movements are characteristic along the A27. Both corridors suffer with peak hour congestion and have limited scope for capacity improvement. In particular the A27 has a mixture of single and dual carriageway widths which causes congestion each time the route narrows and with numerous junctions that have limited capacity and currently perform inefficiently, all of which exacerbates delays and cause a stop / start, slow moving journey for commuters. Peak hour blockages and congestion points impact heavily upon the effectiveness of the route as a viable alternative to the motorway.

2.2.4 The Transport for South Hampshire (TfSH) Sub Regional Transport Model (SRTM) was developed as a multi-modal assessment tool which could be used to support a wide ranging set of interventions across the TfSH sub-Region helping to produce the evidence base for strategy documents including the Transport Delivery Plan (TDP). The following extract from Working Paper 8 helps to highlight the issues set out in the previous paragraph by showing the congestion bottlenecks along the A27 through the am peak period for the base (2010) and forecast years of 2019 and 2026.
2.2.5 The TDP used the SRTM to evidence the need for the A27 Capacity Improvements (Fareham - Segensworth – Windhover) and accordingly has included an overarching scheme within the Plan in February 2013 which is available to view at:


2.2.6 Congested road networks discourage investment and new employment and cause retention difficulties for existing employment with businesses moving out of the area. The peninsula is under-performing economically, with high levels of deprivation linked to the decline of the MOD and high levels of public sector job losses. Significant levels of out commuting from Gosport (in 2001 Gosport had 7,610 in commuters and 18,140 out commuters) compound peak hour transport problems in the central Fareham area through which the majority of peninsula traffic passes. Out-commuting exacerbates congestion on the two main north – south accesses onto the peninsula. The north – south access roads all interface with the A27 which acts as a barrier to traffic wishing to exit both the Gosport and Hamble peninsulas and critically impacts upon the attractiveness of these areas to develop and means that business retention is becoming more problematic as the situation worsens.

2.2.7 Improved multi-modal transport infrastructure encouraging the use of sustainable transport modes and helping car drivers transfer to bus and rail is essential to help overcome current problems in an area where there is little scope for highway capacity improvements. However, improvements which facilitate the best use of existing highway infrastructure for all transport modes are also necessary.

There are a number of additional local issues, aside from congestion, that this scheme will seek to address. These include poor drainage and subsequent flooding of the footpath across to the station car park from the Station Roundabout, conflict between bus movements and other road users and poor interchange between bus and rail.

2.3 Impact of Not Changing

2.3.1 Without improvements congestion and blocking back through central Fareham would remain and become exacerbated by future traffic growth serving to further discourage new development and investment. Inaccessibility of the station would also impact upon the attractiveness of the area to new investors.

2.4 Scheme Aims and Objectives

2.4.1 Given the problems identified above, the following scheme objectives were identified:

- To reduce congestion at this critical town centre, transport interchange, to help remove the transport barriers which currently discourage investment, growth and retention of existing employment;
• To further facilitate the movements of BRT Eclipse buses through the Gudge Heath Lane junction, and onto Redlands Lane to link with the dedicated busway, whilst not compromising the running capacity for general traffic;
• To encourage much needed re-development to the rear of, adjacent to and at the western end of West Street, by improving the urban environment;
• To reduce perceived car dominance and to create new space for urban realm improvements in the vicinity of the station and to the western end of the high street;
• To significantly enhance the interface between BRT Eclipse, bus and rail, and non-car modes through improvements to the station access, bus stop provision and specification and improved provision for pedestrians and cyclists;
• To build upon the ongoing short and medium term bus lane improvements to the east of the station roundabout;
• To provide the opportunity to better manage traffic and prioritise A27 flows over town centre flows, in order to make best use of existing transport infrastructure;
• To provide a safe connection along the A27 and through the junction for cyclists from the railway to Fareham College as part of the cycling network to link key destinations;
• To provide two-lanes straight ahead for all vehicles on the westbound approach to the Gudge Heath Lane junction;
• To provide the opportunity to better manage traffic and prioritise movements at the junction; and
• To minimise the impacts upon third party land.

2.5 Options

2.5.1 Bearing in mind the problems identified on this section of the A27 and the specific objectives determined for the scheme, a number of options were developed for both the Gudge Heath Lane junction and Station Roundabout. There was a process of sifting and refinement aided with the options matrix shown in Appendix A, which is based on the DfT Early Appraisal Sifting Tool (EAST) approach, examining the performance of the options against scheme objectives and deliverability and accessibility considerations.

2.5.2 A signal based option was considered at the Station roundabout but not progressed for a number of reasons but principally because operationally and in capacity terms it works better as a roundabout. It was originally considered that a signal based solution would enable the large amount of existing carriageway space at the station roundabout to be reverted to improved space for buses, pedestrians and cyclists. In order to accommodate all of the necessary turning movements, (which also include catering for the banned turning movements and hence U-turning movements associated with the Gudge Heath Lane junction,) signal based options by necessity were complex, required a huge footprint and did not actually work as well as roundabout based options.

2.5.3 Several options, both signal and roundabout based, have been investigated for improving the Gudge Heath Lane junction, however opportunities at this location are more limited given the existing carriageway alignment and the proximity of fixed urban constraints. Whilst
a roundabout option has been considered this would not be the preferred way forward in design terms principally because lane widths would not adequately accommodate two HGVs running side by side, unless they override the central island and if the central island is designed to allow overrunning then adequate deflection cannot be achieved in accordance with design standards. Impact upon land on the northern side of the carriageway will be the same for a roundabout or signal based solution. With a roundabout solution additional land and property demolition will be required on the southern side of the junction. In traffic terms the roundabout would not adequately address the traffic demand or provide the opportunity to manage traffic flows through the junction or provide the ability to prioritise BRT movements. Other options mainly focused upon signal controlled junction layouts which modify the exiting design to provide the much needed two lanes straight ahead from east to west. Options to provide for pedestrian and cycle crossing movements have also been considered and accommodated.

2.5.4 Comprehensive optioneering outlined above identified a number of key outcomes. In particular that there was no merit in improving the station roundabout without also improving the Gudge Heath Lane junction located to the west. Queues and delays associated with the west bound approach to the Gudge Heath Lane junction meant that any improvement in operational efficiency or capacity created at the Station roundabout would be wasted as blocking back onto the roundabout from the junction to the west would continue to occur. The second key outcome was that the optimum solution at the Station roundabout, was a roundabout and likewise the optimum solution at Gudge Heath Lane was signal based.

2.6 The Scheme

2.6.1 The scheme in its entirety comprises improvements to two critical junctions on the A27 in central Fareham and the connecting carriageway links. The first junction is the A27 Station roundabout which will be re-configured with multi-modal improvements and the second junction is the A27 Gudge Heath Lane signal controlled junction, which will be improved to provide two lanes straight ahead plus right turn lanes and a cycleway. The interconnecting carriageway will be improved.

A27 Station Roundabout

2.6.2 A plan of the preferred scheme is shown on the attached drawing EC/CJ007549/PR/OPT/N. The drawing is confidential being work in progress for the purpose of this submission and currently has no status.
Proposed improvements to Station Roundabout – drawing number EC/CJ007549/PR/OPT/N

Scheme Visualisations, Ariel view from West (L) and Ariel view from South West (R)

2.6.3 The details of this element of the scheme are as follows:

- **Station roundabout** - The proposed scheme modifies the shape of Station Roundabout creating more balanced traffic movements and capacity enhancements, without compromising the operational effectiveness of the junction. Shared use urban realm enhancements on the northern side of the roundabout will provide a link for pedestrians and cyclists from West Street to the railway station. The proposed works create a bus lane and additional shared use space. Taxis and cyclists will also be permitted to use the
The scheme also improves bus stop facilities and makes improvements to the station access for non-car modes in accordance with the Station Travel Plan. The scheme requires modifications to the existing subway.

- **Bus Stop Improvements** - At present eastbound passengers wishing to connect to Fareham Railway Station have to use a bus stop located on the western end of West Street. The proposed scheme provides a new eastbound high quality bus stop on the A27 The Avenue at the A27’s entry to Station Roundabout. This revised location halves the distance that passengers have to travel from the Railway Station to the bus stop.

- **Bus lane** - A new dedicated bus lane will be provided adjacent to the bus stop. This is located above one of the existing ramps and steps to a subway that connects either side of the A27 The Avenue.

- **Subway** - The scheme will require extending the existing subway and providing a new ramp to connect to a widened footway. It is proposed that the footway is changed to a shared use cycleway / footway. It is planned that a safe connection is provided for cyclists from Fareham Railway Station to Fareham College. The subway will also be used to connect to the westbound bus stop on the westbound carriageway of the A27 The Avenue.

- **Retaining Wall** - To create the space necessary for the relocated subway and the widened footway a new retaining wall will be constructed along the southern edge of Station Approach. This will also require realigning a section of the existing footway on the south side of Station Approach. The detail design will consider whether it is better to provide an off road footway/cycleway or whether cyclists should use Station Approach. Land acquisition from Network Rail will be required for the construction of the retaining wall. (There is no objection in principal to this)

- **Station steps** - It is also considered that the existing steps connecting the A27 The Avenue with Fareham Station forecourt, which are narrow and steep, can be widened and improved. Drawing reference EC/CJ007549/PR/OPT/N shows one possible arrangement.

- It is also proposed that the existing footway that runs on the northern side of the A27 from the Station steps to the new bus stop is widened to become a shared use space.

- These concepts can be developed with further discussions with Network Rail during the detail design process.

- **Improvements to the Station Access** - Investigations are underway to identify if it is possible to improve the pedestrian footway from West Street to the Station Forecourt via a footway on the northern side of Station Approach. Also, widening and improving the footway at the station forecourt is being considered. In addition it is planned to resurface the existing Station Approach up to the Station Forecourt. Further discussions will be held with Network Rail to consider if other improvements can also be incorporated into the scheme.

- **Improvements to West Street** - It is also intended to make improvements to West Street. A plan of the proposed changes to West Street is shown on attached plan EC/CJ007549/PR/WEST. The existing westbound entry onto Station Roundabout from West Street will be reduced to a single lane. The existing kerb line will be modified creating more urban realm space on the south side of West Street. The footways on the
south side of West Street will be improved to the same standard as the existing footway on the northern side of West Street.
A27 / Gudge Heath Lane Junction and A27 carriageway link improvements:

2.6.4 A plan of the preferred scheme is shown on the attached drawing EC/CJ007549/GH/13 and is also shown below. The drawing is confidential being work in progress for the purpose of this submission and currently has no status.

Proposed Improvements to Gudge Heath Lane Junction drawing number EC/CJ007549/GH/13

2.6.5 In line with the above the preferred scheme would provide additional straight ahead lanes in both directions, to improve capacity. The scheme also improves the junction layout to reduce delays, improve capacity and improve traffic flow. The scheme upgrades the crossing facilities for pedestrians and cyclists linking in with new connections for cyclists between the station and the college. The details of this section of the scheme are as follows:

Existing Road Layout

2.6.6 The existing road layout at the junction of Gudge Heath Lane and the A27 The Avenue and Redlands Lane provides a single lane for westbound traffic along the A27 with a right hand lane for traffic turning right from the A27 The Avenue into Gudge Heath Lane. Generally the right hand lane between Station Roundabout and Gudge Heath Lane is only used by vehicles wanting to turn right at Gudge Heath Lane. The provision of only a single lane going westbound between Station Roundabout and Gudge Heath Lane causes severe traffic congestion in the evening peak periods. Traffic queues back a considerable distance across
the Station roundabout and along the A27 Western Way on the westbound approach to Station Roundabout.

2.6.7 There are two lanes provided for eastbound traffic. The left hand lane, of the eastbound carriageway of the A27 The Avenue on the approach to the junction at Gudge Heath Lane is dedicated for traffic turning left into Gudge Heath Lane.

2.6.8 A puffin crossing is provided for pedestrians on the western side of the junction. In addition Eclipse buses travel to and from Redlands Lane onto the A27 The Avenue and are given priority at the junction, through Select Vehicle Detection (SVD).

2.6.9 Not all movements are permitted at the junction, at present vehicles are not allowed to turn right out of Gudge Heath Lane and travel eastbound onto the A27 The Avenue. Also vehicles cannot turn right from the A27 The Avenue into Redlands Lane.

**Proposed Road Layout**

2.6.10 The proposed road layout is illustrated on drawing EC/CJ007549/GH/13 which is Appended.

2.6.11 Two lanes are proposed to be provided for both westbound and eastbound traffic whilst also providing a right hand turning lane for westbound traffic wishing to turn into Gudge Heath Lane. This layout will provide both enhanced capacity to help reduce the significant delays caused by this junction but will also enable traffic flows to be managed carefully at this point.

2.6.12 The new road layout will have the same restrictions to turning movements as the existing layout namely: vehicles will not be allowed to turn right out of Gudge Heath Lane and travel eastbound onto the A27 The Avenue. Also vehicles will not be allowed to turn right from the A27 The Avenue into Redlands Lane.

2.6.13 The puffin crossing on the western side of the junction will be upgraded to a Toucan crossing thereby enabling cyclists and pedestrians to cross at this point. It is also intended to provide a cycle link from Fareham Railway Station to Fareham College. To do this the footway on the northern side of the A27 The Avenue will be converted to a shared use footway / cycleway from the proposed Toucan crossing eastwards. It is then proposed that the shared use footway / cycleway continues on the southern side of the A27 The Avenue to Fareham College.

2.6.14 The creation of a new lane on the A27 will impact upon third party land and require the loss of several trees. Investigations are underway to look at ways of minimising the impact as far as possible.
2.7 Policy Context

2.7.1 This scheme is entirely consistent with local and sub-regional policy, as set out below.

Local Economic/Housing Growth

2.7.2 The scheme responds very well to both existing and predicted transport problems that already do and will continue to constrain planned economic and housing growth in Fareham. Congestion in any central area not only constrains and discourages the growth in the centre but also frustrates growth in the surrounding area it serves. This issue is much more pronounced in central Fareham than elsewhere in the county due to its location at the top of the densely populated Gosport Peninsula with limited access and egress roads all of which pass through Fareham and use the A27, causing significant peak period congestion, which frustrates existing local and strategic transport movements. With two strategic development sites in the local area as well as other allocated sites all served by Fareham town centre coming forward shortly plus general background traffic growth this can only compound a situation that is already serving as a barrier to investment in the area.

2.7.3 Relieving pressure at one of the key bottlenecks along the A27 artery as the first phase in a wider investment programme, to assist east to west corridor movements, will help to facilitate the redevelopment of sites to the rear of and adjacent to the station, at the western end of the high street (West Street) as well as other town centre sites, all of which will benefit from transport improvements that enable more efficient use of existing networks. The station and multi-modal interchange will form a critical part of access strategies linked to both the Welbourne strategic development site to the north of Fareham and also the Solent Enterprise Zone in Gosport, hence its accessibility is critical to a number of key sites within the sub-region, not only for car drivers but also for BRT, bus passengers, pedestrians and cyclists.

2.7.4 The scheme also responds very well in terms of the safeguarding existing employment areas. The town centre, like many others, shows signs of decline and, particularly at the western end, is in need of critical investment to prevent further decline and to help boost the local economy. The improvement of the station roundabout will not only improve interconnectivity between modes and reduce congestion and delay but realignment of the carriageway will provide more space for urban realm enhancements. Improving the quality of space will help to reduce the perceptual differences and distance between the station and the main part of the high street. These improvements can be developed in conjunction with redevelopment proposals at the western end of the high street. The opportunity to uplift the urban environment to discourage employers and businesses from choosing to move out of the area currently in decline will help to safeguard existing town centre employment as well as encouraging new investment in the heart of Fareham.
The Solent LEP has set the following strategic objectives: to support enterprise, have a strong focus upon infrastructure including transport, establishing inward investment, skills for growth and developing strategic sectors. The proposed improvements support these objectives by investing in transport infrastructure to provide an environment which encourages growth and investment.

The scheme will contribute to the early delivery of Solent LEPs Growth Agenda. The improvements will improve a key component of the transport network required to connect people to businesses in the region, facilitating sustainable economic growth through the removal of transport barriers which currently frustrate investment and business retention in the area.

The multi-modal transport interchange and junction improvements will encourage the regeneration and redevelopment of key town centre sites by improving accessibility and interconnectivity for all modes of transport, providing reliable journey times, through a general reduction in congestion. Urban realm and environmental improvements will also help uplift the area and provide the confidence to attract growth.

Improving accessibility in this central area will not only deliver direct economic benefits to the town centre, but also attract new investment and retain existing businesses within the wider Fareham-Gosport peninsula, including the Solent Enterprise Zone that is a key component of the LEPs objective to create a growth hub.

The scheme will provide a strong positive impact on the transport growth associated with the housing and employment development at Welbourne, thus ensuring reliable connections direct to an enhanced interchange at the railway station.

The scheme will provide business support by helping to attract new business onto sites adjacent to the station and at the eastern end of the high street. Improving accessibility in the central area will help to encourage businesses to move into the wider area served by the town centres and this includes the Solent Enterprise Zone and Welbourne.

To have maximum beneficial effect on business confidence and economic growth, it is vital that this investment occurs at this juncture, to ensure reliable and reduced journey times for all modes of transport around the key town central interchange area, which are vital for the Fareham-Gosport peninsula, including strategic development sites.

By providing confidence through reliable journey times and investment in alternative modes of transport to the car, private sector investment in these central urban and surrounding areas will be encouraged. The scheme will help to cater for predicted transport growth associated with the development of planned new housing and employment at Welbourne which will be connected directly to the railway station and enhanced interchange facilities.
2.7.13 **LTP3** objectives are focused around a vision for: “A resilient, cost effective, fully-integrated sub-regional transport network, enabling economic growth whilst protecting and enhancing health, quality of life and environment” Ensuring the timely delivery of transport infrastructure to support housing and employment growth and regeneration opportunities and the widening of travel choice to offer people reasonable alternatives to the private car for everyday journeys is a critical objective which is met by the scheme which will help to facilitate re-development and provides for all modes of transport. The managing of the existing transport network to ensure that journey time reliability is maintained and improved to help support economic competitiveness, regeneration, and growth is another fundamental theme which is met through the provision of the scheme which will enable traffic to be better managed and provide journey time consistency. Twelve out of the 14 LTP3 Policies are achieved through implementation of the scheme, as shown below.

### Outcomes that the Joint Strategy for South Hampshire is seeking to achieve

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Policies that contribute</th>
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<tbody>
<tr>
<td>Reduced dependence on the private car through an increased number of people choosing public transport and the 'active travel' modes of walking and cycling</td>
<td>H, I, J, K, L</td>
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<tr>
<td>Improved awareness of the different travel options available to people for their journeys, enabling informed choices about whether people travel, and how</td>
<td>H, I, J, L</td>
</tr>
<tr>
<td>Improved journey time reliability for all modes</td>
<td>A, B, C, D, F, I</td>
</tr>
<tr>
<td>Improved road safety within the sub-region</td>
<td>D, G</td>
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<tr>
<td>Improved accessibility within and beyond the sub-region</td>
<td>B, I, K, L, M, N</td>
</tr>
<tr>
<td>Improved air quality and environment, and reduced greenhouse gas emissions</td>
<td>E, F, H, K</td>
</tr>
<tr>
<td>Promoting a higher quality of life</td>
<td>C, D, E, G, H, I, L, M</td>
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**TfSH Transport Delivery Plan (2012-2026)**

2.7.14 **The TfSH Transport Delivery Plan (2012 – 2026).** The TDP provides a clear statement of the transport scheme priorities to be progressed by TfSH and its member authorities and provides a robust starting point from which to take forward scheme development and funding bid preparation. It also provides partners with a clear view of TfSH scheme priorities.
The TDP is a strategic delivery plan and as such includes improvements to the A27 Corridor. The TDP represents the TfSH position at early 2013 on forecast growth.

2.7.15 The TDP contains 5 key objectives 4 of which are met by the scheme which will: enable higher levels of economic growth by improving local employment opportunities; improve sustainable access linking people to jobs and key facilities; reduce emissions by reducing the need to travel by car; and will reduce unemployment in areas of high deprivation through improved sustainable access to employment centres. The TDP evidences the statement that there is a need for transport intervention to support sustainable economic growth and states that in the absence of transport intervention, transport will act as a constraint on sustainable economic growth. This supports the need for the scheme. Bus Rapid Transit proposals are included; interchange improvements to improve east-west connectivity are included along with Fareham station and proposed interchange; and the A27 Corridor capacity improvements and widening between Fareham station and Segensworth and are included along with strategic cases to justify the delivery of each prior to 2026. Overall there is a high degree of fit between the scheme and the TDP.

FBC Local Plan

2.7.16 The scheme is meets Fareham Borough Local Plan Objectives.

2.7.17 Policy T2 'Improvements to the Strategic Network', supports improvements on the A27. The project will improve the flow of traffic onto and along the A27, reducing congestion within Fareham town centre and on the strategic road network.

2.7.18 The Local Plan specifically outlines support for the re-configuration of the station roundabout to enable enhanced access to the rail station and improve through-flow of traffic. It also sets out Fareham Borough Council’s intention to work with the Highways Authority to provide an enhanced interchange facility at the station to incorporate BRT services and other means of sustainable transport.

2.7.19 The proposals would also aid the development of sites in the Plan, particularly in the vicinity of the station (‘Fareham Station East and West’ – supported by Policy TC12 & TC13) and town centre (Policies in Chapter 5 Fareham Town Centre). Policy TC13 ‘Fareham Station East’ makes specific reference to the objective that this area could potentially be used to provide enhanced interchange facilities should the opportunity arise. This proposal would therefore fulfil with this policy objective.

Sustainable Access

2.7.20 The scheme will improve sustainable access. Enhanced high quality, multi-modal interchange facilities between rail the Eclipse BRT, bus, cycles and pedestrians are a key scheme component in a heavily congested and constrained, transport network in a town centre location. Through making the interchange more accessible particularly to those who travel by bus, cycle or walk, additional modal transfer will be encouraged. Through making
the urban environment around the interchange more attractive to non-car users sustainable access will be improved.

Wider Implications

2.7.21 The scheme in its entirety is the first phase of a much wider programme of investment which seeks to improve the management of traffic along the two critical east to west arteries across southern Hampshire namely the M27 and the A27 and a further linked investment programme covering the Gosport Western Access.

2.7.22 Improvements along the A27 are likely to form 3 distinct phases.

- The first phase being the Station roundabout / interchange improvements and Gudge Heath Lane junction scheme which involves unlocking congestion at the Fareham town centre end of the route, enabling improved access for all to the station along with reduced and more reliable journey times for traffic on leaving the town centre. In isolation the scheme will provide congestion relief at this key bottleneck, in the town centre, along with improved multi-modal enhanced interchange facilities, which along with the A27 route strategy as a whole will help unlock the real benefits for the area.
- The second phase of the A27 Corridor Strategy will involve carriageway and junction improvements between Titchfield gyratory east towards Segensworth roundabout and Junction 9 of the M27. Phase 2 is likely to be linked to improvements for Gosport Western Access which will assist north south movements on and off the Peninsula wishing to make longer distance movements. The respective elements of this scheme will form part of a Tranche 2 bid to the LTB.
- The third phase will involve the section between Gudge Heath Lane junction and Titchfield gyratory and will again involve carriageway width and junction improvements.

2.7.23 Phases 1 and 2 of the A27 Corridor improvements require LTB funding which will be critical to the successful delivery of the overall programme. There is no likelihood of other sources of funding being identified in the foreseeable future and at the necessary scale to deliver the scheme. Without the scheme development and investment in the area will continue to be discouraged due to inaccessibility.

2.8 Internal and External Drivers of Change

2.8.1 The commencement of development at the Solent Enterprise Zone and planned forthcoming new development at Welborne in North Fareham, have provided external drivers relating to the need for and timing of mitigation to improve accessibility on the Fareham and Gosport peninsula in order to help maximise opportunity and investment in relation to both of these strategic sites. The need to deliver the growth agenda has risen in profile over recent years and the need for investment in infrastructure to facilitate this is now critical.
2.9 **Partnership Bodies and Stakeholder Working**

2.9.1 We have worked closely with the key stakeholders to develop this scheme.

2.9.2 Network Rail support the scheme which adds value to the railway station immediate environs and the accessibility of the site in relation to Fareham town centre, Fareham College, and BRT links to new and planned development. First have been actively engaged in scheme design to ensure it meets with their needs and they are consulted on any scheme designs changes.

2.9.3 First Hampshire, Dorset & Berkshire support the improvements and welcome the enhanced interconnectivity between their flagship Bus Rapid Transit scheme ‘Eclipse’ and rail.

2.9.4 Fareham Borough Council are fully supportive of the improvements, which are complementary to their plans including recent work to improve the urban realm around Fareham High Street.

2.9.5 Letter of support from the key stakeholders are included in Appendix B.
3 Economic Case

3.1 Introduction

This Chapter presents the Economic Case for the A27/GHL scheme. Here we provide an assessment of the various impacts of the scheme and demonstrate that it offers good value for money. The analysis has been undertaken in accordance with the DfT Transport Appraisal Guidance (TAG), adopting a proportionate approach in line with the scale of the scheme.

3.1.2 Appendix C contains an Appraisal Summary Table for the scheme, detailing the main economic, environmental and social impacts. These are discussed in more detail in the sections that follow.

3.2 Summary

Our economic assessment shows that this scheme represents good value for money with a BCR of greater than 2, particularly due to decongestion benefits at these two key junctions on the A27 and improved access to the rail station for pedestrians and bus users. In addition the scheme is forecast to:

- Reduce journey times through this section by up to 40 seconds per vehicle for car and bus users
- Improve access to the western end of Fareham High Street, helping to link it with the station and revitalise that area of the town centre
- Have a small positive benefit on air quality by smoothing traffic flow at the junctions
- Improve journey quality and ambience, particularly for non-motorised users, through investment in the urban realm which is consistent with nearby improvements that Fareham BC have already made in that area

3.3 Options Appraised

To clearly demonstrate the benefits of the scheme elements, the following options were appraised:

- Do-minimum (standard SRTM Reference Case)
- Do-something (including the A27/ Gudge Heath signalised junction and A27/ Station Roundabout proposals).

3.4 Modelling Approach and Assumptions

3.4.1 Modelling for A27 scheme made use of the SRTM developed for Solent Transport in 2010. Forecast years were developed for 2019 and 2036 in order to provide benefit profile results required for cost benefit appraisal.

3.4.2 The SRTM forecasts weekday transport movements, assessing morning, interpeak and evening peak conditions and applying changes to journey mode choice and trip distribution
based on changes in relative travel costs. The model is based in 2010 with forecasts years possible for 2014/19/26/31 and 2036.

Scenario Overview

3.4.3 Tests that were undertaken were derived from variations of the established SRTM reference case:

- Do-Minimum – SRTM Reference Case;
- Do Something- Do Minimum plus physical impacts of
  - Additional general traffic lane on westbound approach of A27 at Station Roundabout
  - Additional ahead only general traffic lane on the westbound approach (and exit) of A27 at the junction with Gudge Heath Lane.
  - Traffic signal timings at A27/ Gudge Heath junction re-optimised to account for new lane arrangement.

3.4.4 At this time no account has been made within SRTM for any impact of improved Active Mode accessibility or Urban Realm improvements, which would be expected to add value and increase the overall scheme benefits shown below.

3.4.5 For the SRTM model runs utilised for the TUBA economic assessment, the Do Minimum land use inputs were also used for the Do Something tests.

Appraisal assumptions

3.4.6 Standard input (scheme file) assumptions were used for the application of TUBA to assess the impact of demand and cost changes in matrices produced by SRTM. TUBA version 1.9.1 was used with a standard (TAG recommended) set of discount rates, value of time inflators etc. All costs and benefits are reported in 2010 prices and values with scheme construction assumed to be in 2016, opening in 2017 and evaluation period running for the 60 years 2015-2074.

3.5 Economic Impacts

3.5.1 A cost benefit analysis of the scheme has been undertaken in accordance with TAG guidance using the SRTM. The analysis was based on scheme design layouts as appended and scheme costs as presented in the Financial Case.

3.5.2 The outputs from this appraisal are summarised in the Transport Economic Efficiency (TEE), Public Accounts (PA) and Analysis of Monetised Costs and Benefits (AMCB) Tables provided in Appendix D.
3.5.3 Since the initial LTB September 2013 submission the analysis has been updated, using the latest version of TUBA to assess the scheme. This results in the following:

<table>
<thead>
<tr>
<th>BCR</th>
<th>NPV</th>
<th>PVC</th>
<th>PVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>£8.47m</td>
<td>£6.09m</td>
<td>£14.56m</td>
</tr>
</tbody>
</table>

3.5.4 This scheme has a BCR of 2.4, which represents good value for money. The total benefits of the scheme are generated for both business and non-business users. Business user benefits total £6.28m, whilst non-business user benefits amount to £7.89m of which commuters contribute £3.14m and remaining non-business users £4.74m.

3.5.5 The vast majority of benefits from the scheme accrue from journey time savings, which are felt by both private road users and public transport passengers. The provision of two lanes straight ahead in the westbound direction between the A27 station roundabout and Gudge Heath Lane junction will help reduce queuing and tailbacks through the town centre. Likewise the additional lane in the eastbound direction will also provide benefits.

3.5.6 Detailed junction modelling using Linsig and Arcady junction design software, has been undertaken to provide confidence that overall capacity benefits will be achieved by the proposed schemes. 2012 base data has been used to inform the assessments with 2019 used as a forecast year. Initial design options for both signal based and roundabout based solutions were tested resulting in progression of the roundabout based option for Station roundabout and the improved signal based option for A27 / Gudge Heath Lane junction. Layouts were plugged into the SRTM to provide 2019 ‘Do Something’ or forecast turning movements and queuing information, which have in turn been used iteratively to refine the design. Results clearly show improved operational effectiveness, improvements in capacity, and reductions in queue length and vehicle delays, at both junctions.

3.5.7 Outputs from the SRTM forecast that the scheme will contribute to up to a 40 second reduction in journey time per vehicle for bus and car users. The largest benefits are for those benefitting from the additional westbound lane, as shown below. There are also some benefits for those approaching from the north and south, who benefit from improvement to the signal timings at the junction.
### 3.5.8
A key driver to assist economic growth being consistent with the overarching objectives to improve access to Fareham and Gosport is to improve flow along the A27 which will help reduce inappropriate traffic on adjacent unsuitable roads, including West Street and the detailed modelling showed this has been met by the improvements.

### 3.5.9
Further network changes and changes in traffic flows relating to the development of Welborne and progression of Stubbington Bypass and Newgate Lane Improvements will be taken into account as work on these related schemes progresses.

### 3.5.10
Improvements in travel time for non-business users account for £8.02m of the total benefits, of which £5.90m is generated by private road users and £2.11m public transport users benefitting from improved BRT Eclipse service journey times. Business users accumulate a £5.97m benefit from travel time reductions. The greatest part of this benefit is to goods vehicles, worth £2.48m, with public transport business passengers gaining £2.17m in benefits from journey time savings.

### 3.5.11
Cost savings will be accrued over time if congestion is reduced, traffic is better managed across the network and traffic flows are more constant rather than stop/start conditions.

### 3.5.12
The project will improve journey time reliability for all transport modes including: BRT Eclipse services travelling from the station south towards the dedicated Eclipse busway which currently pass through both junctions; general traffic will be assisted through the reduction of congestion and delay at this critical town centre interchange and as the wider A27 Corridor Improvement strategy is progressed then further benefits and journey time reliability will be achieved; cyclists and pedestrians will also be assisted through the
provision of dedicated facilities and crossing points helping to reduce delays currently experienced through conflict with other modes.

3.5.13 The September 2013 LTB Submission for this scheme included an indicative BCR of 2.6, but this was generated using an older version of TUBA (v1.8). Therefore, we have updated this assessment using the latest version of TUBA, v1.9.1, which is in 2010 prices, rather than 2002. There are a number of other differences that may also account for the slight difference in BCR between the two tests:

- The economics file (value of time, fuel etc.) have changed and been updated by the DfT to reflect latest values;
- The calculation of PVC differs slightly with the new version; and
- The 2013/2010 cost conversion factor is slightly different to the previous one (0.894 compared to 0.9).

Regeneration

3.5.1 TAG Unit A2.2 states that 'if accessibility is not currently a constraint, or a scheme does provide a significant change in journey times, journey costs, or journey reliability for trips to, from, and/or within a regeneration area, then a statement to that effect should be provided in the Appraisal Specification Report.'

3.5.2 The A27 improvements aim to unlock the potential for regeneration on the Gosport Peninsula including the Solent Enterprise Zone. The scheme, however, while providing an improved environment for accessing the area by public transport and other non-car modes, does not generate a significant change in journey times, costs or reliability. As such, a full regeneration analysis is not required. However, given the potential of the scheme to act as a gateway to Fareham and the Enterprise Zone, we assess that the impact on regeneration will be slightly beneficial. We have also provided an analysis of the development potential indirectly unlocked by the scheme, and the potential uplift to jobs and GVA resulting in the Fareham area.

Employment and GVA impacts

3.5.3 The employment, housing and GVA impacts have been assessed using anticipated growth projections from Fareham Borough Council (FBC) and advice from the Solent LTB guidance. The scheme is expected to improve journey time reliability, reduce congestion and improve overall accessibility to the Gosport Peninsula. As a result, the scheme is expected to generate a range of direct and indirect employment opportunities across a range of sectors and unlock the potential for future housing delivery. The table below summarises the forecast uptake is expected indirectly from the scheme up to 2026. A detailed breakdown of this summary is included at Appendix E.

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1 Local Major Transport Scheme Fund: Project Application Form Guidance (Solent LTB)
Forecast Indirect Development Floorspace up to 2026

<table>
<thead>
<tr>
<th>Type</th>
<th>Forecast Indirect Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>7,381 units</td>
</tr>
<tr>
<td>Employment</td>
<td>206,696m² Gross External Area</td>
</tr>
<tr>
<td>Leisure</td>
<td>13,850m² Gross External Area</td>
</tr>
<tr>
<td>Retail</td>
<td>7,725m² Gross External Area</td>
</tr>
<tr>
<td>Other (education, civic, residential care)</td>
<td>26,577m² Gross External Area</td>
</tr>
</tbody>
</table>

The total development floorspace that will be indirectly facilitated by the scheme is 254,848 square metres (up to 2026)

3.5.4 The scheme will help facilitate 2,150 square metres of primarily B1 employment uses at the Station and 8,000 square metres of primarily B1 uses at the western end of the high street through enhanced inter-connectivity and accessibility for all modes, relief of congestion and enhanced urban environment.

3.5.5 The scheme will also help support 107,077 square metres of primarily B1, 2 and 8 employment uses at Welbourne along with 137,621 square metres of employment at the Solent EZ. Both sites will have critical links to the station as part of their access strategies and traffic from both sites will need to interface with the A27 and its junctions to get onto the strategic network beyond in order to make longer distance journeys. The effective operation of the stretch of the A27 and junctions forming the scheme which is in the heart of Fareham will be key to both sites.

A total of 7,381 housing starts will be indirectly facilitated by the scheme up to 2026.

3.5.6 The scheme will help bring forward 509 homes within the town centre and station sites, including 312 flats through removing the transport barriers and congestion which currently frustrates growth and by providing improved multi modal interconnectivity for those without access to a car, along with enhancements to the urban environment to encourage investment into a more attractive area.

3.5.7 The scheme will more indirectly assist the provision of 6,502 homes at Welbourne along with 372 homes at the Solent Enterprise Zone. These homes will be dependent upon a robust access strategy that involves links to the A27, Station roundabout and railway station. Removing the congestion and enhancing accessibility for and between non car modes is critical in this respect.
3.5.8 The application of employment densities taken from the Homes and Communities Agency ‘Employment Densities Guide’ 2nd Edition 2010 (Driver Jonas Deloitte) indicates that if this level of development was realised up to 2026, up to 11,756 indirect gross Full Time Equivalent (FTE) jobs would be created.

3.5.9 Indirect Employment outputs are taken as those jobs created at development or re-development sites in close proximity to the scheme which could be facilitated by the implementation of the scheme or where the scheme will form a key part of the access strategy for sites that are further afield; or those jobs which have been safeguarded or prevented from moving out of the area.

3.5.10 As such three categories of beneficial indirect employment outputs have been identified:

- those relating to the facilitation of re-development sites to the rear and adjacent to the station and also at the western end of West Street / the western end of the high street and within the town centre footprint. These sites are all within the immediate vicinity of the scheme and will all significantly benefit from reduced congestion, improved traffic flow, enhanced multi-modal connectivity and improved urban enhancements. In this context it is anticipated that approximately 718 gross jobs will be facilitated.
- those relating to the facilitation of key strategic sites further away from the scheme but which will benefit from the scheme. Transport movements from larger, strategic sites including Welborne and the Solent Enterprise Zone will essentially require links and interconnectivity with Fareham station and will involve interface with the A27 and the junctions, whether by car, bus or cycle, for both local and strategic transport movements. The scheme will form a key part of the sites access strategies. In this context it is anticipated that approximately 11,039 gross jobs will be facilitated.
- those relating to safeguarded jobs which may otherwise be lost as business moves away from a declining area and new business is reluctant to move in due to significant congestion and poor interconnectivity and accessibility with the station. In this instance existing jobs within the footprint of the town centre (based upon super output areas) have been used, where there is a real threat that inaccessibility will drive employment away. In this context it is anticipated that up to 5,300 jobs could be indirectly safeguarded. Acknowledging that manufacturing and constructions jobs are traditionally more transferable, a more conservative estimate focusing other sectors, such as wholesale/retail, could equate to the safeguarding of 2,700 jobs.

3.5.11 The direct employment outputs are taken to be those created during the construction process of this scheme and have been estimated at 83 temporary construction jobs based on 12.5 FTE/£million of the total scheme spend. Additional jobs created, which have not been included in this calculation, as a result of any increased BRT Eclipse services or frequencies which will benefit by greatly improved interconnectivity at the station would increase this figure.
3.5.12 At this stage it is not possible to predict whether, if this level of employment is achieved, the jobs will be 'new' to Fareham's economy or relocated from elsewhere in the borough. Only the former will represent an expansion in the local economy. We have taken the conservative view that only 20% will be net additional jobs, a total of 2,368. It should be noted this is a purely notional conservative estimate and it is anticipated that any net additionally could be as high as 40% as suggested by HM Treasury guidance.

3.5.13 The table below summarises the gross and net additional jobs created or safeguarded by the scheme. Appendix E provides a detailed breakdown of these calculations.

<table>
<thead>
<tr>
<th>Total Created and Safeguarded Jobs</th>
<th>Total Jobs</th>
<th>Net Additional Jobs (@20%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Jobs safeguarded</td>
<td>5,300</td>
<td>5,300</td>
</tr>
<tr>
<td>Total gross jobs indirectly created</td>
<td>11,756</td>
<td>2,351</td>
</tr>
<tr>
<td>Total Temporary Construction Jobs</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>Total Gross and Net Additional</td>
<td>11,839</td>
<td>2,368</td>
</tr>
</tbody>
</table>

Wider Impacts

3.5.14 The 2011 Annual Business Survey, produced by the Office of National Statistics suggests that 37% of construction spend in the UK relates to the sector’s GVA contribution nationally. The impact of the construction investment (£6.61m) is therefore approximately £2.45m based on the ratio of total turnover to GVA. The 2011 Annual Business Survey also provides relevant benchmarks to calculate GVA per employee for different sectors of economic activity. These values have been applied to the anticipated development floorspace and FTE jobs created to derive an average annual GVA per employee of £55,800 over the investment horizon. Full details of this calculation are included in Appendix E.

3.5.15 The uplift in GVA associated with job creation in the Fareham BC area will contribute to the wider GVA of the whole Solent LEP area, which the recent Oxford Economics ‘Solent LEP Economic Output’ study (March 2014) forecast to increase annually by approximately £38,000 per employee.

3.5.16 The scheme will trigger significant wider economic benefits for the surrounding area. As previously outlined the scheme will form the first phase of the critical A27 corridor improvements in conjunction with planned improvements to assist Gosport Western Access. The economic benefits will be widespread as previously identified helping to accommodate transport movements from key strategic sites at Welbourne and the Solent Enterprise Zone.
as well as the benefits for the town centre. The reduction of congestion black spots, better management of traffic improvements in urban realm, public transport interchange, access by active modes and traffic flow brought about by this scheme will help ensure this area remains an attractive proposition for businesses and safeguard jobs. Without this investment, the current employment in the immediate area is more vulnerable as infrastructure is not improved and businesses may seek to site their offices elsewhere.

3.6 Environmental Impacts

3.6.1 Our assessment of the environmental impacts of this scheme is based on TAG Unit A3 (Environmental Impact Appraisal).

Air Quality and Noise

3.6.2 There will be a modest increase in vehicle km as a result of the scheme (in the region of 4,000 additional vkm in Fareham borough over a 12hr period) and there may be changes in terms of traffic flow patterns and speed which could have a bearing on both noise and emissions.

3.6.3 At the Station roundabout a reduction in congestion and stop/start conditions could result in changes to traffic flow and speed which could have a positive impact on both noise and emission levels.

3.6.4 The SRTM has an inbuilt Emissions Assessment Tool (EAT) application, which provides outputs for carbon and other greenhouse gas emissions. The SRTM-EAT uses the same underlying methodology as used in the DEFRA Emissions Factor Toolkit. The results from EAT show very minor reduction in emissions as a result of the scheme, including a forecast reduction of 125kg of carbon per 12hr period in 2036. This equates to approximately 58 tonnes per annum

3.6.5 Since November 2011, TAG guidance has measured greenhouse gas impacts in terms of tonnes of carbon dioxide equivalents, prior to this it was measured in tonnes of carbon equivalent. Therefore, in order to convert the SRTM-EAT outputs to the latest unit of measures we have multiplied it by the conversion factor of 44/12 based on the relative molecular mass of carbon dioxide to carbon. This gives a forecast carbon reduction of 213 tonnes of carbon dioxide equivalents per annum. Therefore we assess the overall impact of the scheme on air quality to be slightly beneficial.

3.6.6 Alterations to the alignment of the A27 on the approach to Gudge Heath Lane junction could result in changes to road traffic noise levels in relation to properties which would become slightly nearer to the realigned carriageway and where the kerb-line is moved closer to

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2 Assuming a factor of 1.265 for the 12hr period between 1900 – 0700 based on variation in highway demand observed in the SRTM
properties. Alterations to the junction could result in changes in traffic flow and speed – this may also affect road traffic noise levels at the adjacent properties.

3.6.7 DfT guidance (TAG Unit A3) recommends conducting a noise assessment if a road project either: alters the line or level of a carriageway; causes a change in traffic flow/speed; or where there are dwellings within one kilometre; a noise assessment must be carried out. Given that it is not clearly evident that the project will result in a change in road traffic noise level of 1db LA10, 18hr or more, we have assessed that the scheme will have a mostly neutral impact upon disturbance from noise, with slight dis-benefits likely to be offset by slight benefits. It should be noted that the area of the scheme is currently shown in the DEFRA noise maps as having high noise levels (front line properties between 65 and 75 dB Lden) as shown in the Portsmouth agglomeration noise action plan:


3.6.8 As the scheme and consultation progresses a more detailed road traffic noise assessment will be undertaken to determine whether any properties would be eligible for the provision of noise mitigation measures under the Noise Insulation Regulations.

3.7 Landscape, Townscape and Historic Resource

Station Roundabout

3.7.1 In the vicinity of the Station roundabout the scheme is surrounded by a mixture of uses, including the Fire Station, close to the run down western end of the high street. The location is dominated by the highway and roundabout; in particular due to the narrowness of the pedestrian routes north of the station roundabout leading to the eastern end of West Street. These routes are often bound by low walls, beyond which are generally low-rise buildings which offer little vibrancy to town centre.

3.7.2 The scheme would provide additional shared use space and associated bus lane into the town, which would open up this area to create an attractive, pleasant and safe environment for all modes of transport to flow unimpeded. The scheme would provide a high-quality streetscape, through a widened shared space for cyclists and pedestrians, a new surface treatment and associated street furniture and planting would all act to improve the character of the area in the vicinity of the station. Resulting in improved perception, higher usage, and in turn opening up the development sites close to the station, introducing new commercial space fronting onto the shared space, bus lane and carriageway beyond.

3.7.3 The urban environment along the footpath between the Station roundabout towards the over bridge, including the subway, is considered harsh. The footpath is closely bounded by railings to the south along the A27 and a high wall to the north, the harshness is further compounded by railings with shrub planting at a higher level close to the station and the
over bridge. This existing hard landscape and subway offers little relief to pedestrians and cyclists.

3.7.4 The scheme offers a widened footway/cycleway enhancements to the subway, a new eastbound bus stop, providing improved access and more direct routes to and from the railway station. This will again encourage higher usage and improve perceptions, through providing public transport users with an attractive and efficient interchange, as well as on that does not impede private vehicle users. The opportunity to deliver improvements to the townscape in the vicinity of the station is a clear objective identified in Fareham’s draft ‘Local Plan Part 2: Development Sites and Policies’ (Policy TC13).

**Gudge Heath Junction**

3.7.5 In the vicinity of the Gudge Heath Lane junction the scheme will run through a largely a residential area of mixed architectural style and character, set back from the A27, including Bishopwood a Grade II*. A number of key educational and community facilities are located close to this junction, including Fareham College. On the west bound carriageway. Generally boundary treatments between properties and The Avenue include brick walls of varying height, railings, grass verges, hedges, trees and shrubs. The vegetation helps soften the existing built form.

3.7.6 The widening of the existing highway to accommodate the scheme would result in the removal of a strip of garden vegetation which currently forms the perimeter boundary of residential properties, which are significantly set back from the A27, west of the Station roundabout. Whilst some dense mature trees would need to be removed, which forms a visual screen between the properties and A27, none of these trees are protected by TPOs. This scheme provides the opportunity open up key views and mitigation planting would enhance the retained green verges, subject to agreement with land owners. The scheme will help uplift the character of the area through surface treatment, planting and high specification street furniture, providing positive benefits for the area around the station and Gudge Heath Lane.

3.7.7 Therefore, we assess the overall impact of this scheme on streetscape and the urban environment to be **moderately beneficial**.

**Biodiversity and Water Environment**

3.7.8 The overall impact on the natural environment is assessed to be **neutral** with any slight or adverse impacts overcome through mitigation measures.

**Station Roundabout**

3.7.9 The proposed works at the Station Roundabout are located within an urban area. There are limited areas of amenity grass verges and shrubs, a small number of semi-mature trees, none of which are protected by TPOs. The majority of the works will be within existing areas
of hard standing which have negligible ecological value. The widening of the eastbound approach to the roundabout will require a small area of shrubs and semi-mature tree removal. This small area of shrubs is of low local ecological importance. There is no evidence of foraging habitat for bats and as this vegetation is isolated, it is unlikely to provide a commuting route for bats. If further studies were to reveal evidence of foraging bats or nesting birds suitable mitigation and enhancement measures would ensure no overall adverse impacts. These works are not anticipated to have an adverse impact on any other protected species or habitats. Overall, it is probable that these works will have a slight adverse impact on the natural environment, however with suitable mitigation measures to replace the lost trees and habitat it is likely that this could be reduced to a neutral impact.

Gudge Heath Junction

3.7.10 The proposed works at Gudge Heath Junction will require the removal of a line of mature trees along the eastbound carriageway verge, none of which are protected by TPOs. There is currently no evidence of bird nesting or bats, however an inspection of the trees will be undertaken prior to scheme commencement. Should further surveys reveal that the tree line is of importance to foraging and commuting bats or the trees support a bat roost of medium regional importance, depending on the species of bat and type of roost, the loss of a bat roost may have a moderate adverse impact. If further surveys confirm that the tree line is not important for roosting, commuting or foraging bats, the works are likely to have a neutral impact in the long term with appropriate mitigation measures to replace the lost trees and habitat.

3.8 Social and Distributional Impacts

3.8.1 An analysis of the Social and Distributional Impacts of the A27/Gudge Heath Lane scheme has been undertaken following the principals laid out in TAG units A4.1 (Social Impact Appraisal) and A4.2 (Distributional Impact Appraisal).

3.8.2 In line with this guidance, an approach that is proportionate to the size of the investment and nature of the scheme has been taken.

3.8.3 The following table summarises the indicators included within the Social and Distributional Impacts analysis, and the analytical approach we have taken for this scheme. Blank cells indicate that no analysis is required by the guidance. Note that there is a screening stage for Distributional impacts to determine whether a detail appraisal is required. In several cases below only the screening stage has been undertaken as this has indicated that no further analysis is required.
### Proposed Social Assessment

- **User Benefits**: Qualitative Only. Scheme not linked to particular residential areas, therefore DI assessment not required.

- **Physical Activity**: Analysed using HEAT.

- **Noise**: Screening stage only. Changes in traffic flows are not significant enough to require an assessment. Also no schools or other children’s facilities which would require an assessment.

- **Air Quality**: Screening stage only. Changes in traffic flows are not significant enough to require an assessment. Also no schools or other children’s facilities which would require an assessment.

- **Accidents**: Detailed analysis not required as no significant changes in traffic flows.

- **Security**: Screening stage only. Given proximity to station a fuller assessment is not required.

- **Severance**: Strictly a DI analysis is required as crossing etc improved. But very limited local catchment affected. Also no amenities important to vulnerable groups, other than station itself, in area.

- **Journey Quality**: Qualitative assessment only.

### Proposed Distributional Assessment

- **User Benefits**: The User Benefits are calculated as part of the Economic Impacts and the results are described in that section of the document.

- **Option and Non-Use Values**: No impacts. Scheme does not “substantially change the availability of transport services within the study area.”

- **Accessibility**: Undertaken as a Distributional Impact. No case for strategic accessibility assessment or accessibility audit as scheme will not substantially affect accessibility.

- **Personal Affordability**: Undertaken as a Distributional Impact. No impact. Scheme will not affect affordability.

### 3.8.4

The following sections describe the approach and results of these analyses for each indicator.

#### User Benefits

3.8.5 The User Benefits are calculated as part of the Economic Impacts and the results are described in that section of the document.

3.8.6 A Distributional Impacts analysis is required where the impacts of a scheme can be ascribed to specific residential areas, as an analysis against the income profile of those areas can be
made. However, as the A27 is a key route serving the Gosport Peninsula and wider south Hampshire area, its catchment cannot be readily identified and Unit A4.2 of TAG therefore recommends a more qualitative approach.

3.8.7 While it is not possible to link those impacted by the scheme to specific residential areas, some indication of the income profile of those benefitting from the scheme can be inferred from the modes of transport affected. The Users who will experience a change in the generalised cost of travel due to the scheme are primarily those making walk, cycle and bus trips, or those making rail trips and using these modes for access. These users will experience some reductions in actual journey times and perceived journey and wait times arising from the improved quality of environment resulting from the scheme.

3.8.8 In general, the users of these modes – bus in particular – have lower incomes than car users and rail users who use car as an access mode. It therefore seems unlikely that the scheme will disproportionately dis-benefit those on lower incomes: on the contrary, the benefits are most likely to be weighted towards these groups.

Physical Activity

3.8.9 The SRTM incorporates the World Health Organisation’s Health Economic Assessment Tool (HEAT). HEAT calculates the number of preventable deaths per person as a result of changes in walking and cycling. It includes using the DfT’s statistical value of lives and mortality rates and therefore giving values to the changes in mortality. In addition to preventable deaths the HEAT tool also calculates the benefits of reduced absenteeism as a result of extra active mode trips (over 30 minutes in duration). The improved interchange for bus and rail passengers brought about the scheme should contribute to fewer car trips and we anticipate some mode shift to active modes given the improved environment for pedestrians and cyclists. However, HEAT results suggest extremely marginal change in mortality and absenteeism benefits as a result of the scheme.

3.8.10 Nevertheless, the SRTM HEAT calculations cover the whole of Hampshire, and not just Fareham. Therefore, benefits of the scheme may be diluted by the scale of the area considered compared to the scheme impacts. Given the anticipated benefits to active modes, we assess the impact of the scheme on physical activity to be slightly beneficial.

Noise

3.8.11 The screening criteria require that a Noise DI distributional assessment impact is undertaken if the intervention causes:

- Significant changes in traffic flow, speed or %HDV content (>+25% or <-20%)
- A change in the separation between people and traffic
- There are schools or other places where children spend significant time outside in the vicinity.
None of the above applies for this scheme. Therefore no DI assessment has been made, and as the changes in traffic flows resulting from the scheme are minimal, the SI is assessed as **Neutral**.

### Air Quality

The same screening criteria used for Noise also apply to Air Quality, so on the same basis the SI assessment for this indicator is **Neutral**, and no DI analysis is required.

### Accidents

An analysis of STAT19 data on the accidents in the vicinity of these junctions shows there have been 25 personal injury accidents (PIAs) along this stretch of road in the last 3 years. This includes 7 at Station Roundabout itself and a further 7 in the vicinity of the Gudge Heath Lane junction. Two of these 14 accidents were serious.

The analysis has shown that use of informal crossings by pedestrians and interactions between buses and other modes at the nearby bus stop have been contributory factors. The scheme will assist road safety for all transport modes, reducing potential conflict between buses, cars and non-motorised users (NMUs). Improved circulatory carriageway markings and clearer direction will be employed at the station roundabout along with much improved facilities for pedestrians and cyclists to help reduce conflict with general traffic. Improved cycleway connections between the station and the college with upgraded crossing facilities will also help improve journey safety.

However, these benefits may be offset by the slight increase in vehicle kilometres the scheme is forecast to generate, which result from reduced congestion making this a more attractive route for road users. Therefore, we assess the overall impact of the scheme on accident rates to be **Neutral**.

### Security

To assess the Security SI, an audit assessment has been carried out against the criteria in Table 4.1 of TAG unit A4.1 (Social Impacts).

The results of this audit are shown in the following table.
<table>
<thead>
<tr>
<th>Security Indicator</th>
<th>Importance</th>
<th>Current Provision</th>
<th>With Scheme Provision</th>
<th>Changes due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site perimeters, entrances and exits</td>
<td>Low</td>
<td>Moderate: Attention to boundary and exit marking, but otherwise unfavourable use of materials.</td>
<td>High: Clearly marked site perimeters/exits. Use of open fencing rather than solid walls</td>
<td>Improved definition and addition of walking and cycling facilities and materials</td>
</tr>
<tr>
<td>Formal Surveillance</td>
<td>High</td>
<td>Moderate: CCTV system in place, but number, location of system not optimal. Poor design, which discourages staff surveillance.</td>
<td>High: Effective CCTV system in place. Design to encourage staff surveillance and group passengers.</td>
<td>Scheme will add CCTV at proposed bus stop and subway upgrade</td>
</tr>
<tr>
<td>Informal Surveillance</td>
<td>High</td>
<td>Moderate: Unfavourable use of materials (fencing etc) but reasonable proximity of retailers or other activity.</td>
<td>High: Positive use of materials (fencing etc.) and design to encourage open visibility from site surrounds. Encouragement or proximity of retailers or other activity.</td>
<td>Improved layout of station approaches designed to encourage human activity</td>
</tr>
<tr>
<td>Landscaping</td>
<td>High</td>
<td>Low: Landscaping features (design, plants etc) inhibits visibility and encourages intruders.</td>
<td>High: Positive use of landscaping features (design, plants etc) to contribute to visibility and deter intruders.</td>
<td>Investment in well-chosen street furniture and plants to create a welcoming environment without compromising visibility</td>
</tr>
<tr>
<td>Lighting and Visibility</td>
<td>High</td>
<td>High: Good design to avoid recesses and facilitate camera/monitor view. Lighting to daylight standard in passenger areas when facility open. Attention to lighting on signing, information and help points.</td>
<td>High: Good design to avoid recesses and facilitate camera/monitor view. Lighting to daylight standard in passenger areas when facility open. Attention to lighting on signing, information and help points.</td>
<td>No change</td>
</tr>
<tr>
<td>Emergency Call</td>
<td>High</td>
<td>Moderate: Basic provision of emergency phones, help points and public telephones. Improvements to these and on emergency help procedures needed.</td>
<td>Moderate: Basic provision of emergency phones, help points and public telephones. Improvements to these and on emergency help procedures needed.</td>
<td>No change</td>
</tr>
</tbody>
</table>
3.8.19 Based on the above assessment, the overall SI assessment for Security is **Moderate Beneficial**.

**Severance**

3.8.20 The scheme will upgrade the existing pedestrian footway along the A27 to incorporate a shared pedestrian/cycle route and upgrade the existing controlled crossing to a Toucan to reduce severance for cyclists.

3.8.21 The existing pedestrian subway at station roundabout is subject to occasional flooding and the proposed arrangement will provide an improved drainage solution to remove pedestrian severance.

3.8.22 The overall pedestrian realm and accessibility to public transport interchanges will be upgraded at station roundabout with the use of higher quality surfacing materials and improved way finding on key desire lines.

3.8.23 The existing conditions represent moderate severance to pedestrian and cycling movement. An assessment of the change in severance of the proposed scheme demonstrates **slight severance** and therefore represents a **slight positive impact** in accordance with Table 5.1 of TAG Unit A4.1.

**Journey Quality**

3.8.24 A qualitative assessment of journey quality considers the three key elements set out in Table 6.1 of TAG Unit A4.1:

- Traveller care: aspects such as cleanliness, level of facilities, information and the transport environment;
- Travellers' views: the view and pleasantness of the external surroundings in the duration of the journeys; and
- Traveller stress: frustration, fear of accidents and route uncertainty.

3.8.25 The principal aims of the scheme are to provide an improved highway solution to address congestion issues, public transport interchange and pedestrian/cycle provision.

3.8.26 The improvements to **Traveller Care** will include upgraded subway security and drainage; introduction of bus facilities and information; and a higher quality pedestrian and cycle environment. **Traveller's views** will be addressed through the creation defined pedestrian desire lines and entrance to the station interchange. Overall **Traveller Stress** will be reduced with moderate journey time savings for vehicles and improved routing and crossing facilities for both cyclists and pedestrians. It is anticipated that the scheme will have a **moderately beneficial** impact on overall journey quality.
Option and Non-Use Values

3.8.27 In line with the guidance given in TAG Unit A4.1 (Social Impacts), this scheme is judged to have a **Neutral** impact as it does not “substantially change the availability of transport services within the study area.”

Accessibility

3.8.28 Two levels of Accessibility appraisal are set out in the TAG Guidance (A4.2). These are:

- A Strategic Accessibility Assessment
- An Accessibility Audit

3.8.29 Two levels of Accessibility appraisal are set out in the TAG Guidance (A4.2). These are:

- A Strategic Accessibility Assessment
- An Accessibility Audit

3.8.30 These two methods of appraisal principally focus on public transport accessibility. While the scheme demonstrates some synergy with the assessment criteria, it primarily addresses wider accessibility issues including pedestrian/cycling movement and overall security. The benefits of the scheme relating to these impacts are discussed in more detail in the preceding severance, security and journey quality. However, it is anticipated that the scheme will result in **moderately beneficial impact** non car accessibility through improved crossing facilities, introduction of bus stop, upgraded subway and increased security.

Better Use of Transport Infrastructure

3.8.31 The scheme makes better use of existing infrastructure at the station by improving general accessibility for all along with enhanced interconnectivity with BRT Eclipse buses. The improvements will complement improvements already made / ongoing in relation to BRT services passing the station, along with the planned new A27 bus gate and off-line bus lane on the westbound approach to the station roundabout which will be constructed in 2014 to assist BRT. Minor improvements linked to Local Sustainable Transport Funding in the vicinity of the station will also be complemented. The scheme will also enable better use to be made of the transport network surrounding the scheme in particular the A27 and West Street which currently experience equal volumes of traffic and are quite clearly neither operating at the right levels for a strategic artery compared to a local high street which should have a much lower flow. The scheme will enable traffic from West Street to revert to the A27 where appropriate as the higher level road in the network hierarchy.

Personal Affordability

3.8.32 The scheme will have no impact on the price of travel, or in the availability of low cost travel to vulnerable groups. It is therefore assessed to be **Neutral.**
4 Financial Case

4.1 Introduction

4.1.1 The financial case sets out the profile of the scheme costs and provides justification of the affordability and details of funding responsibilities.

4.2 Scheme Costs

4.2.1 The total scheme cost is £6,610,635. The outline scheme costs, including allowances for inflation and risk, are summarised in the Table below. Hampshire County Council Quantity Surveyors have used their estimating and pricing database as the base for the unit rates. The rates are based on competitively tendered rates for the SE7 Regional Highways Framework. This Framework will be used to procure the works. Also, in some cases, rates have been used for specific items of work from recent similar projects. The rates are commensurate with Q1 2014 prices. An allowance for inflation of 2.5% increase per annum has been assumed. The risk costs are based on a comprehensive appraisal of risks and a Quantified Risk Assessment as detailed under the Management Case of this document. An itemised breakdown of the cost estimates are provided in more detail at Appendix F.

4.3 Outline Scheme Costs

4.3.1 The overall scheme cost is £6,610,635. Of the total scheme cost, £1,652,659 (25%) will be part funded by third party contributions and Hampshire County Council capital. The remaining £4,957,976 (75%) is being sought from the LTB fund request.

4.4 Spend Profile

4.4.1 A high-level spend profile for 2013/14 through to 2016/2017 is summarised in the table below.

High Level Spend Profile

<table>
<thead>
<tr>
<th>Spend (£)</th>
<th>13/14/15</th>
<th>15/16</th>
<th>16/17</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feasibility Design</td>
<td>146,341</td>
<td></td>
<td></td>
<td>146,341</td>
</tr>
<tr>
<td>Design</td>
<td>366,377</td>
<td></td>
<td></td>
<td>366,377</td>
</tr>
<tr>
<td>Works Costs</td>
<td></td>
<td>3,471,758</td>
<td></td>
<td>3,471,758</td>
</tr>
<tr>
<td>Risk</td>
<td></td>
<td></td>
<td>892,000</td>
<td>892,000</td>
</tr>
<tr>
<td>Supervision</td>
<td></td>
<td>343,164</td>
<td></td>
<td>343,164</td>
</tr>
<tr>
<td>Procurement Costs Station roundabout</td>
<td></td>
<td>30,000</td>
<td></td>
<td>30,000</td>
</tr>
</tbody>
</table>
4.5 Hampshire County Council Funding

4.5.1 Hampshire County Council will invest £1,652,659 being 25% of the total scheme cost from its capital resources and any relevant Section 106 receipts in order to help bring this scheme forward. This shows a local commitment to the scheme and underlines the belief that investment in access to the Gosport Peninsula will help remove the transport barriers to growth and will encourage investment at key sites including the Solent Enterprise Zone, and will also help to reduce journey times in congested urban areas.

4.6 LTB Funding Required

4.6.1 The GAP funding required to deliver this scheme is in the order of £4,957,976 which equates to 75% of the total cost and this funding is sought through this Local Major Transport Scheme Funding bid to the Solent LTB.

4.7 Risk allowances

4.7.1 A detailed and quantified risk assessment (QRA) has been undertaken, which has highlighted a risk value of £892,000 in relation to the scheme. This figure is included in the overall scheme cost and spend profile.

4.7.2 The approach to risk management and an explanation of how HCC will mitigate financial risks and the risk appraisal and register is fully reported later on in the Management Section of this Business Case. In addition the Quantified Risk Assessment is included in Appendix G.
4.7.3 Cost overruns, if required will be funded through Hampshire County Council Capital resources.
5 Commercial Case

5.1 Introduction

5.1.1 Hampshire County Council has a proven track-record for delivery and we are therefore confident that this project can be completed within the stated timescales and milestones. The scale and types of works are familiar to those delivering them. The scheme will level in additional investment through facilitating re-development of allocated land within and adjacent to the railway station and also at the western end of West Street. It will also help encourage First to invest in additional Eclipse buses and increased service frequency through the provision of improved journey time reliability.

5.2 Specification

5.2.1 The scheme has been developed with regular meetings with Hampshire County Council’s Officers, Network Rail, South West Trains, Fareham Borough Council and First buses. Hampshire County Council has a standard specification that it uses on all of its highway projects.

5.2.2 The SE7 Regional Highways Framework Model Contract Specification will be used for the proposed works. If required additional items will be added to the standard specification.

5.3 Sourcing Options and Payment Mechanisms

5.3.1 The SE7 Regional Highways Framework will be used to procure the works. Framework Contractors performance is monitored, quarterly, using key performance indicators. The KPI scoring is used as an incentive enhancement mechanism for Tender Assessments. Depending on a contractors performance their Tender Assessment Value used for the purpose of Tender Analysis can vary by plus or minus 10%. This mechanism provides an incentive for the Framework Contractors to maintain a high quality of work and standard of service whilst working for HCC.

5.3.2 In addition the Contract will be let with a Quality/Price bid. This will enable HCC to ask and score the Tenderers on specific questions relating to managing the highway network, public safety, and other key issues whilst constructing the works.

5.4 Procurement Strategy

5.4.1 The preferred procurement strategy is for a single Contract to be established for all the works as opposed to a split contract based upon the different delivery dates. This arrangement will be preferable to having two separate contractors, due to the potential conflicts engendered through having two contractors working on the same road space. It will also benefit from the economies of having to liaise with only one Contractor.
5.4.2 The works at the Gudge Heath Lane Junction will be provisional in the single Contract with the Contractor tendering for the whole Contract as standard. However construction west of the junction will only start once land ownership is obtained.

5.4.3 The Contract will be procured under the terms and conditions of the NEC 3 Engineering and Construction Contract using Option B: Priced contract with Bill of Quantities and will be let under the Regional Framework Contract. This Contract is applicable to both the value and the timescales required for the scheme and is used for contracts up to £5m.

5.5 Certainty of Delivery

5.5.1 Work at the A27 station roundabout is a key first stage in delivering the overarching package of improvements which seek to improve access to Fareham and Gosport. Improvements on the A27 are required prior to the provision of Stubbington Bypass and associated works which are planned for 2016/17 and 2017/18. A phased delivery programme has been defined based upon the assumption that the A27 station roundabout and Gudge Heath lane will be implemented in 2016/17, hence the intention is that this scheme will be delivered according to programme.

5.6 Commercial Risks to Delivery

5.6.1 Some of the risks to delivery will be mitigated by transferring them to the identified Contractor to manage. This will be achieved by the risks being part of their contractual duty to manage, or by ensuring specific additional clauses are written into the Contract to allow the Contractor to price as part of the scheme costs.

5.6.2 The main areas of risk associated with the delivery of the project are:

- Land acquisition at Gudge Heath Lane
- Land acquisition with Network Rail

5.6.3 The risk to the project created by the need for land acquisition at Gudge Heath Lane is mitigated by this aspect being provisional in the Contract therefore enabling the other works to progress irrespective of the progress of this land acquisition.

5.7 Human Resource Issues

5.7.1 There are no HR issues associated with the contracting for this scheme.

5.8 Contract Management

5.8.1 Engineering Consultancy will prepare the Contract documents in-house. The contract will be tendered using the electronic tendering system In-Tend. This facility enables Tenderers to receive and submit Tender documents electronically. It also manages Tender queries and their responses.
5.8.2 During construction the site will be managed by an experienced Resident Engineer. The Resident Engineer will be responsible for the day to day management of the Contract. Site engineers, Clerk of Works and Quantity Surveyors will also assist the Resident Engineer.

5.8.3 Regular progress meetings will be held to monitor progress on site. The Project Manager will also attend these meetings and if need be will provide technical support and assistance to the Site Team.

5.8.4 Separate Risk Reduction meetings will also be held on a regular basis by the Site Team and the Contractor.

5.8.5 If needs be the Project Manager will inform the Client Manager of any significant events which can then be considered by the senior management teams.
6 Management Case

6.1 Introduction

6.1.1 The management case sets out the delivery strategy for the scheme and provides a coherent plan for managing the project, governance, risk and communication through to monitoring and evaluating benefit realisation.

6.1.2 The project lifecycle will be underpinned by Hampshire County Council through a Gateway Review Process (GRP) to ensure each stage is critically assessed, by personnel with the relevant skills and experience, prior to commencing the next stage.

6.2 Governance Structure

6.2.1 The Governance Structure, shown below, sets out the working arrangements for Hampshire County Council and other partnership bodies, including Fareham BC, Network Rail and South West Trains, to successfully deliver the scheme.

6.2.2 The project will be delivered by Hampshire County Council. The Senior Responsible Officer for the project delivery is: Chris Peake – Head of Engineering Consultancy. The Client Manager for the project is: Heather Walmsley Project Coordinator Major Schemes. Hampshire County Council, as Highway Authority, are committed to maintain roads on the adopted highway network, excluding those falling under the remit of the Highways Agency.
6.3 **Partnership Arrangements**

6.3.1 There are no formal partnership arrangements in relation to the scheme however there will be close working with NR, First, Hampshire, Dorset & Berkshire and Fareham Borough Council throughout the scheme development and delivery.

6.4 **Programme & Project Management**

6.4.1 The scheme construction dates, are provided below.

**Scheme Construction Dates**

<table>
<thead>
<tr>
<th>Scheme Location</th>
<th>Duration</th>
<th>Start Works</th>
<th>Completion of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>A27 Gudge Heath Lane (east of junction)</td>
<td>6 months</td>
<td>March 2016</td>
<td>September 2016</td>
</tr>
<tr>
<td>A27 Gudge Heath Lane (west of junction)</td>
<td>6 months</td>
<td>October 2016</td>
<td>March 2017</td>
</tr>
<tr>
<td>A27 Station Roundabout</td>
<td>12 months</td>
<td>March 2016</td>
<td>March 2017</td>
</tr>
</tbody>
</table>

6.4.2 **A Gantt Chart** showing the detailed programme is included at Appendix H. The Gantt Chart illustrates the works required from detailed design through to scheme completion and demonstrates a critical path for overall delivery.

6.5 **Project Plan**

6.5.1 A detailed Project Plan for the scheme delivery activities is included at Appendix I. This document outlines the works, resources and timescales required for the design, implementation and construction phases of the project. The project plan describes key milestones and start/finish dates for each task.

6.6 **Evidence of Major Scheme Delivery**

6.6.1 Hampshire County Council has successfully delivered Phase 1A of the Fareham to Gosport BRT (Redlands Lane to Tichborne Way) dedicated busway within the last 5 years. Phase 1A, costing £25m was delivered to budget within an extremely rapid timescale (see timescales in the table below) given the nature of scheme complexities and legal opposition. This demonstrates the ability of the County Council to work to programme and deliver complex major schemes. The project faced legal opposition on environmental grounds and was ultimately taken to the Supreme Court where the final Appeal was dismissed and Objections overturned. In addition the County Council faced two separate Village Green Applications one of which was rejected the other partly accommodated.
The culmination of the legal challenges resulted in a 9 month delay to construction programme, disruption and heavy legal costs.

<table>
<thead>
<tr>
<th>Month</th>
<th>BRT Construction</th>
<th>Funding, Planning Application, Objections and Legal action</th>
<th>TVillageGreen1 (The Corridor)</th>
<th>TVillage GreenG2 (The Triangle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-08</td>
<td></td>
<td>Scheme commenced and bid for CIF funding submitted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-09</td>
<td></td>
<td>CIF2 Funding Approved</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar-09</td>
<td></td>
<td>Planning Application submitted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-09</td>
<td>Main Contract Awarded</td>
<td>Planning Approved (14 delegations from objectors overcome)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug-09</td>
<td>Environmental Works underway</td>
<td>Pre-action protocol served by objectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sep-09</td>
<td>Injunction stopped all works</td>
<td>Judicial Review application &amp; ex-parte injunction served on 9th</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very limited works permitted</td>
<td>Expedited Injunctive hearing held on 17th &amp; injunction varied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct-09</td>
<td></td>
<td>Expedited High Court Hearing held 14th-15th</td>
<td>Application to Register as TVG received by CRA on 30th</td>
<td>Application to Register as TVG received by CRA on 30th</td>
</tr>
<tr>
<td>Nov-09</td>
<td></td>
<td>Judgment handed down on 17th</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Works recommenced</td>
<td>Injunction lifted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec-09</td>
<td>Injunction stopped all works</td>
<td>Application to Court of Appeal &amp; ex-parte injunction served on 2nd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month</td>
<td>BRT Construction</td>
<td>Funding, Planning Application, Objections and Legal action</td>
<td>TVillage Green1 (The Corridor)</td>
<td>TVillage Green G2 (The Triangle)</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>----------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Jan-10</td>
<td>200</td>
<td>Expedited Injunctive Hearing held on 28th &amp; injunction varied</td>
<td>Reg Committee on 11th agreed as CRA to hold Public Inquiry</td>
<td>Reg Committee on 11th agreed as CRA to hold Public Inquiry</td>
</tr>
<tr>
<td>Feb-10</td>
<td>Limited works permitted</td>
<td>Expedited Court of Appeal Hearing held on 10th/11th</td>
<td>Public Inquiry held 22nd to 26th</td>
<td></td>
</tr>
<tr>
<td>Mar-10</td>
<td></td>
<td>Expedited Court of Appeal Hearing held on 10th/11th</td>
<td>Public Inquiry held 22nd to 26th</td>
<td></td>
</tr>
<tr>
<td>May-10</td>
<td></td>
<td>Inspector’s Report recommends non-registration</td>
<td>Application formally rejected by CRA on 30th</td>
<td></td>
</tr>
<tr>
<td>Jun-10</td>
<td>Works recommence</td>
<td>Judgment handed down on 10th &amp; injunction lifted</td>
<td>Application formally rejected by CRA on 30th</td>
<td></td>
</tr>
<tr>
<td>Jul-10</td>
<td></td>
<td>Application to Supreme Court &amp; Injunction</td>
<td>Expedited Permission Hearing held on 16th</td>
<td>Public Inquiry held on 1st to 7th</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expedited Permission Hearing held on 16th</td>
<td>Appeal Granted on Article 12(1)(b) and interpretation of Habitats Regulations only</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Injunction refused</td>
<td></td>
</tr>
<tr>
<td>Sep-10</td>
<td></td>
<td></td>
<td>Main Works Start</td>
<td></td>
</tr>
<tr>
<td>Oct-10</td>
<td></td>
<td></td>
<td>Inspector’s report recommends partial registration</td>
<td></td>
</tr>
<tr>
<td>Month</td>
<td>BRT Construction</td>
<td>Funding, Planning Application, Objections and Legal action</td>
<td>TVillageGreen1 (The Corridor)</td>
<td>TVillage GreenG2 (The Triangle)</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>----------------------------------------------------------</td>
<td>-----------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Nov-10</td>
<td></td>
<td>Supreme Court Hearing held on 8th</td>
<td></td>
<td>Development of alternative strategies to resolve potential registration, including preparation of alternative design &amp; planning application, and potential statutory exchange of land</td>
</tr>
<tr>
<td>Jan-11</td>
<td></td>
<td>Judgment issued on 19th</td>
<td></td>
<td>Landowner registers concerns on point of law</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appeal dismissed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb-11</td>
<td></td>
<td></td>
<td></td>
<td>2nd Legal Opinion obtained by CRA on Inspector's Report</td>
</tr>
<tr>
<td>Apr-11</td>
<td></td>
<td></td>
<td></td>
<td>Application formally rejected by CRA on 11th</td>
</tr>
<tr>
<td>May-11</td>
<td></td>
<td></td>
<td></td>
<td>Pre-action protocol served</td>
</tr>
<tr>
<td>Jun-11</td>
<td></td>
<td></td>
<td></td>
<td>Dialogue opened with residents to consider exchange land options</td>
</tr>
<tr>
<td>Jul-11</td>
<td></td>
<td></td>
<td></td>
<td>Agreement reached with residents to informally provide exchange land</td>
</tr>
<tr>
<td>Apr-12</td>
<td>Opening Ceremony on 25th April</td>
<td></td>
<td></td>
<td>End of Judicial Review window on 11th</td>
</tr>
</tbody>
</table>
6.7 Statutory Powers and Consents

6.7.1 The majority of the scheme will be delivered on land owned by Hampshire County Council as the Highways Authority. The Gudge Heath Lane section of the scheme requires third party land purchase. The delivery programme and risk register make allowance for the requirement of a Compulsory Purchase Order (CPO) to maintain a March 2017 delivery date. Consultation and negotiations will commence in June 2014 to mitigate the requirement for any CPO.

6.7.2 The A27 Station Roundabout section of the scheme requires liaison and land agreements with Network Rail as a partnership body. The delivery programme and risk register have made an allowance for these agreements to be in place to maintain a March 2017 delivery date.

6.7.3 Traffic Regulation Orders (TROs) will be required to address the proposed on and off road changes resulting from the scheme. The following TROs associated with the project will be processed during the construction period:

- Bus Lane on Station Roundabout
- Potential banned turning movements relating to Gudge Heath Lane

6.8 Stakeholder Management

6.8.1 SRN: The scheme is on the A27 which forms part of the Strategic Road Network in southern Hampshire. The A27 is a critical east to west artery running parallel with the M27 catering for mainly local traffic and traffic wishing to access the motorway for longer distance journeys. As Highway Authority for the A27 Hampshire County Council are fully supportive of the scheme and the delivery timescale.

6.8.2 The scheme also interfaces with the Strategic Rail Network at Fareham Railway Station where multi-modal interconnectivity with the Eclipse BRT forms a key scheme component. Network Rail are supportive of the principal of the scheme which provides enhancements to the station environs, its access link and junction and further discussions are planned to discuss matters of detail.

6.8.3 Delivery: Hampshire County Council’s Engineering Consultancy will project manage the design and implementation of the project. If need be additional resources can be procured via either a Technical Resources Framework, or via the Strategic Partnership with Atkins.

6.8.4 Public: The scheme is likely to be supported by the vast majority of the wider local population in Fareham but there may be objections from those living adjacent to the scheme.

6.8.5 Consultation: High level consultation has taken place on schemes included within the Transport Delivery Plan during several rounds of consultation which resulted in 3 related schemes being included for implementation: BRT further network development; the station
interchange enhancements; and also the A27 corridor capacity and widening scheme. No adverse comments were received in relation to these elements.

6.8.6 Fareham Borough Council has conducted thorough consultation both on its Core Strategy, adopted in August 2011, and through its emerging Local Plan Part 2 ‘Development Sites and Policies’. Detailed policies and development sites in Part 2 of the Local Plan, have been consulted upon through an issues and option stage in January 2008 for 6 weeks and more recently between 15 October and 26 November 2012.

6.8.7 As part of recent consultation on the Fareham Local Plan high level consultation has taken place regarding the principal of the 3 proposals included in the TDP listed above.

6.8.8 In relation to the future development of BRT an extension of the existing Eclipse route from Gosport via the college to the station roundabout and then, via the bus station on to Welbourne is proposed, with an additional new route heading east towards Portsmouth. In relation to the station interchange and the A27 the need for improvements is included.

6.8.9 As scheme details are now more specific meetings will be held with directly affected land owners in June. In addition an overarching public consultation event is scheduled for June and July which sets the scheme in the context of the wider improvement strategy for the A27 and improving access to Fareham and Gosport. This process will be governed by our Stakeholder Management Plan for this scheme, which is currently being prepared.

6.9 Risk Management

6.9.1 In line with the Transport Business Cases guidance the Management Case considers the following:

- The risk management process and strategy
- The Risk Register, Risk Management Strategy and Quantified Risk Assessment (QRA)

6.9.2 **Purpose of Risk Analysis:** The risk management process for the scheme has been undertaken in line with the Department for Transport’s Estimation and Treatment of Scheme Costs TAG Unit 3.5.9.

6.9.3 Risk management is seen as a key process underpinning good scheme governance and achievement of scheme objectives in a cost effective manner. Accordingly an appropriate framework (comprising managing reporting, process and responsibilities) has been implemented as part of scheme management arrangements as set out below.

6.9.4 In the context of the scheme, risk has been defined as the potential for future events which have a negative impact on the achievement of scheme objectives. Events which provide a potential opportunity to impact positively on objectives have not been addressed. It should be noted also that risks relating to the operational management of the scheme have been
excluded although technical performance risks shall be addressed through compliance with appropriate design standards and codes of practice.

6.9.5 **Risk Management Process**: The risk management modelling approach adopts the following four primary processes as shown below.

6.9.6 These processes are broadly cyclical (plan-do-review), requiring ongoing review and update to ensure effective controls are put in place and operated during scheme development and delivery. The process is underpinned by appropriate communication and reporting arrangements to ensure visibility at the relevant management level. The process will be reviewed on a regular basis to ensure proper operation and it remains effective in supporting achievement of the scheme objectives. The evaluation process for ensuring the benefits of the scheme is outlined later in this report. The primary risk management processes are outlined below.

6.9.7 **Identifying Risks**: The identification process has been informed through inclusion of relevant scheme team technical specialists, Project Manager, Client Manager and Project Director. Risks have been identified in view of known causes and the source of these at three levels:

- Strategic (external to the scheme)
- Project management activities
- Technical (design and construction activities)

6.9.8 The initial risk review will be updated on a regular basis and as a minimum at key review points. Each risk has been described in view of its impact on project performance, cost, time,
objectives and compliance with health and safety and environmental regulatory requirements.

6.9.9 The risk description, causes and consequences have been established in order to allow assessment of the likelihood of occurrence and direct and indirect impacts. It should be noted that catastrophic risks, which arise from extraordinary events and result in exceptional consequences to the achievement of scheme outcomes and objectives, have not been included.

6.9.10 **Assessment of Risks**: The purpose of this step is to establish and evaluate the net effect of the identified risks. Five point scales have been used to assess both probability of occurrence during the scheme lifecycle and impact. Subsequently, a systematic approach was used to estimate the probability of occurrence and cost (direct and indirect e.g. associated with delays and clean up) impact in order to determine the risk cost (in line with TAG Unit A1.2 Scheme Costs). At this stage, the cost range associated with the consequences of each risk was estimated, where the mean is the most likely value. The estimates have been derived following consultation with the Project Manager, scheme team technical specialists and quantity surveyor, to ensure estimates of probability and cost are complete and accurate, and consistent with the basis of the base cost estimate.

6.9.11 It was assumed when estimating risk costs that all risk events are independent and therefore no correlation exists between the occurrence of one event and another. The mean value of all risk costs has been calculated and has been added to the scheme base cost to provide a total risk adjusted baseline investment cost. The total investment cost excludes operating costs and risks following completion of construction and commissioning.

6.9.12 No adjustment is proposed for optimism bias on the basis that base costs reflect most likely values and risk costs have been added to reflect possible additional costs associated with provisional works and risk events. The estimate excludes potential savings associated with events which result in a cost reduction.

6.9.13 **Response Planning**: Following assessment and evaluation of risks a systematic approach was adopted to respond to risks and allocate responsibility to the most appropriate party in line with the governance arrangements set out previously.

6.9.14 One of four strategies has been adopted in developing a suitable response plan:

- Accept or tolerate the consequences in the event that the risk occurs
- Manage the risk through improvements in controls for management or technical processes
- Transfer or escalate the risk
- Terminate the activity giving rise to the risk.

6.9.15 Development of response plans to manage risk have been undertaken only where the likelihood of occurrence and impact can be reduced in a cost effective manner. A combined
strategy has been considered where a mix of the above options would be the most appropriate option.

6.9.16 Risks should be transferred to a third party e.g. insurer or escalated to HCC for consideration only where they can be more cost effectively controlled. If this is not possible then either the activity giving rise to the risk should be terminated or the potential consequences accepted by the Project Director and scheme sponsor.

6.9.17 The initial assessment of risk probability and consequences was reviewed in line with proposed strategies and response plans.

6.9.18 **Implementation and Review:** As stated above, the response plans shall be proportional to the risks they are to manage. Furthermore, their effectiveness is dependent on proper implementation and review of the residual risk (including any secondary risks associated with implementation). Reviews of the status of scheme risk assessments and their related response plans (as part of project reporting) will be an integral part of weekly progress meetings during progression of detailed design and the construction period. All key risks will be formally reviewed and costed at gateways and key decision points in the scheme lifecycle.

6.9.19 **Risk Reporting:** Risk reporting is key to providing visibility of threats to the scheme at the appropriate level and to ensure controls are being properly operated to provide governance and protect achievement of scheme objectives.

6.9.20 A risk register has been established to record all risk information relevant to the risk management processes outlined above. This will provide the data required for analysis and management reporting/review. The reports will set out the current risk profile and how this has changed during the reporting period. It will also set out the status of response plans and highlight plans for near term risks where response plans have not been properly implemented or residual risk exposure remains high.

6.9.21 The scheme Project Manager will be responsible for maintaining the risk register and ensuring the information is up-to-date, accurate and complete. Line of reporting shall be in line with the governance arrangements set out earlier. This process will enable senior managers to consider budget requirements in a timely manner to deal with any cost overruns.

6.9.22 **Risk Review, Risk Register and Cost Results:** As part of developing the Business Case and the scheme costs, a full review of scheme risks was undertaken in May 2013. This was then reviewed and amended on 8th May 2014 by members of the Project Team, including a Senior Quantity Surveyor and engineers with detailed knowledge of the scheme.

6.9.23 A copy of the Updated Risk Register and Quantified Risk Assessment (QRA) is included at Appendix G. The probability and impact scales used for the QRA is summarised in the tables
following. The register contains risk information, analysis and risk costs estimates. The headline risks include:

<table>
<thead>
<tr>
<th>Risk</th>
<th>Likelihood (RAG)</th>
<th>Impact (RAG)</th>
<th>Comment / Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Party land requirements at Gudge Heath Lane may lead to a Public Inquiry.</td>
<td>Red</td>
<td>Red</td>
<td>Assume a Public Inquiry is required and allow sufficient time in the programme to deal with this matter.</td>
</tr>
<tr>
<td>Liaison with Network Rail may delay programme.</td>
<td>Amber</td>
<td>Amber</td>
<td>There is a risk that negotiations with Network Rail delay the delivery of the project. To mitigate for this allow a 2 year period in the design programme to deal with this matter. Start liaison with Network Rail as soon as possible.</td>
</tr>
<tr>
<td>Network Rail do not wish to negotiate to allow works on their land or the release of their land.</td>
<td>Green</td>
<td>Amber</td>
<td>Meetings with NR to date have been positive. Allow sufficient time to negotiate to work on or purchase their land if necessary and have design alternative.</td>
</tr>
<tr>
<td>Residents may apply to protect the trees with tree preservation orders. This may delay process.</td>
<td>Amber</td>
<td>Amber</td>
<td>The Public Inquiry process should take priority over TPO.</td>
</tr>
</tbody>
</table>

Probability and Impact Scales Used for the Quantified Risk Assessment
Risk Probability and Impact Grid (Used in the 2\textsuperscript{nd} step for assisting produce the Qualified Risk Assessment)

<table>
<thead>
<tr>
<th>Probability</th>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>High</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Very Low</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

6.9.24 **Response Plans:** Tasks to be undertaken as part of Response Plans to address and mitigate the identified risks are identified in the Risk Register. The key response tasks involve:

- Making the Project Director and legal team aware of the proposed works so they can pre-empt and mitigate against any potential legal actions
- Assume a Public Inquiry is required and allow sufficient time in the programme to deal with this matter.
- There is a risk that negotiations with Network Rail delay the delivery of the project. To mitigate for this allow a 2 year period in the design programme to deal with this matter.
- Start liaison with Network Rail as soon as possible.
- Early and effective communication and liaison with the Client, Statutory Undertakers and other key stakeholders including public
- Early more detailed site investigations as part of detailed design
- Clear methods for addressing statutory processes
- Adequate construction supervision and management

6.9.25 **Risk Analysis:** Analysis of all scheme risk costs has been undertaken in compliance with TAG Unit A1.2. The risk register provides the mean risk cost. The mean risk cost is used for reporting risk costs to the Project Board.

6.10 **Evaluation/Monitoring Plan**

6.10.1 **Evaluation during Construction and Implementation:** In line with the Projects in Controlled Environments (PRINCE2) Project Management methodology lessons learned from the implementation of the scheme will be documented at the end of key stages. The evaluation team, identified to carry out Post Project Evaluation (PPE), will audit performance against aims and objectives in relation to activity performance, financial projections, construction and commissioning. Project managers will oversee the maintenance of a Lessons Learned Log from which will derive a Lessons Learned Report at project closure. This information will be shared with stakeholders and other authorities as appropriate.

6.10.2 **Scheme Evaluation:** Before and after scheme monitoring will be undertaken to evaluate the schemes effectiveness against stated objectives. Traffic and cycle count data will be collected and collated, and journey time data evaluated. As part of ongoing BRT Eclipse monitoring, perception surveys are regularly programmed to gauge the satisfaction of public
transport users. This type of survey could also be used to gauge satisfaction with enhancements to the urban environment.

6.10.3 The facilitation of development is not so easy to monitor specifically in relation to transport elements due to commercial sensitivities and the many and varied complex economic factors at play.

6.10.4 The core evaluation objectives are to:

- Measure the success of the scheme against the identified scheme objectives
- Demonstrate that the scheme has achieved value for money by meeting key indicators linked to the scheme objectives

6.10.5 The key benefits sought are:

- Improved journey times and reliability
- Reduce town centre congestion
- Facilitate improved public transport journey times and reliability through BRT Eclipse
- Improve urban environment
- Minimise impacts on third party land
- Better management of traffic and road safety

6.10.6 Existing traffic count data as well as updated survey data will be used to establish the baseline for the scheme prior to its construction. Monitoring (data collection) will also take place at regular intervals after the scheme has opened. This will allow a full before and after comparison to be made and allow judgment of whether the scheme has met its objectives. The following key post-opening time periods will be considered:

- After a period of one and two years post opening to establish initial travel patterns, and
- After a period of five years post opening when travel patterns should have fully settled down. This review period may be varied to fit in with progress on the south east Hampshire BRT network.

6.10.7 The Monitoring and Evaluation plan will assess the performance of the proposal against the scheme objectives, as set out in Chapter 2, based on the indicators and methodologies utilised in the wider BRT monitoring and evaluation plan and Fareham BC local evaluation. This assessment will also enable evaluation in terms of delivering the key benefits and minimising the possible dis-benefits.

6.11 Assurance

6.11.1 The National Procurement Strategy for Local Government (NPSLG) recommends a Gateway Review Process (GRP) is adopted for all new procurement projects. Hampshire County Council has a Gateway process set up as a mechanism to enable projects to be assessed at critical stages in its lifecycle prior to commencing the next stage.
6.11.2 The use of the Gateway process enables:

- Realistic and achievable targets
- Deployment of relevant skills and competencies to a project
- Stakeholders understanding of a project and issues involved
- Less chance of a project failing
- Identification of issues within a project and lessons learnt
- Compliance and governance of standing orders and best practice
- Visibility of the procurement process
- Provision of a comprehensive audit trail

6.11.3 Project Appraisals will be produced as part of the Gateway process.
A27 Station Roundabout and Gudge Heath lane Junction
Improvements

Business Case – Appendices

J. EAST Matrix of Options
K. Letters of Stakeholder Support
L. Appraisal Summary Table
M. TEE, ACMB and Public Accounts Tables
N. GVA Calculations
O. Scheme Estimates
P. Risk Register QRA
Q. Work Programme
R. Project Plan