Luton Dunstable Busway

Major Scheme Business Case
Updated for Full Approval

Luton Borough Council

December 2009

Contents

Appendices

1 Introduction

1.1 Background

1.1.1 On 3 September 2008 the DfT wrote to Luton Borough Council (LBC) awarding Conditional Approval, and setting out the Conditions under which Full Approval would be awarded. This included submission of the following information in support of its application for Full Approval:

- Confirmation that the scheme remains unaltered.
- Confirmation of the total scheme costs, the Government contribution, and availability of other financial contributions.
- Further details of the Project Management arrangements.
- Details of the Tendering exercise and any resulting changes.
- Confirmation that operators are committed to provision of services, together with details of any contractual agreements that are either in place or being developed.

1.1.2 Since Conditional Approval, the scheme has entered the Delivery phase and LBC is now seeking Full Approval in order that the scheme can be implemented in accordance with the programme set out at Chapter 6.

1.1.3 The route of the Busway, as shown in Figure 2.1, has not changed since the Conditional Approval submission. It should be noted, however, that the scheme will be delivered through a number of different contractual arrangements set out in Table 1.1 below:

Table 1.1 Summary of Contractual arrangement to deliver the Busway & ancillary infrastructure

Scheme element	Delivered by	Procured through
Main segregated route	BAM Nuttall	Competitive tender (OJEU)
On highway bus stops civils work (Luton)	Volker Highways	LBC highways term contractor
On highway bus stops civils work (Dunstable & Houghton Regis)	Amey	CBC highways term contractor
On highway bus priority loop around Dunstable town centre	Amey	CBC highways term contractor (this element funded by CBC as local contribution)
Communications & passenger information technology	ACIS (subject to change)	Sub regional consortium agreement

1.2 Transport issues in the conurbation

1.2.1 The Luton-Dunstable-Houghton Regis conurbation experiences transport problems as a result of road traffic congestion. The development of approximately 43,000 new homes and 35,000 new jobs in Luton and South Bedfordshire is planned between 2001 and 2031 as part of the growth of the Milton Keynes/South Midlands Sub-Region, one of four growth areas identified in the Government's Sustainable Communities Plan. Demand for travel is increasing and coupled with recent and planned development activity is, and will be expected to continue, putting more strain on the existing transport networks.

1.2.2 Congestion also has a severe impact on the reliability and journey times for bus services in the peak periods, particularly on the approaches to and within Luton and Dunstable town centres, and the heavily trafficked A505 between Luton and Dunstable and East Luton

1.2.3 corridors, where the volume of general traffic can prove a considerable hindrance. Bus priority measures have been implemented wherever practicable, though the opportunities for further implementation of measures are limited by the demands on the existing highway network and the lack of attractive alternatives for car users in the event of road space re-allocation.

1.2.4 The Busway scheme will bring back into public transport use the disused Luton-Dunstable railway line. Buses will join and leave the busway at selected points, enabling them to serve significant parts of the Luton-Dunstable-Houghton Regis conurbation. In making use of the disused railway alignment, the busway avoids parts of the congested road network and provides improved bus journey times and greater reliability.

1.2.5 The area has been identified by the Government as a Priority Area for Economic Regeneration (PAER) and transport improvements are fundamental to the regeneration of the area. Congestion also has an adverse impact on local businesses, and it is considered to be a deterrent to new employment-generating investment. The Busway route passes close to a number of sites proposed for re-development. It will have an important role to play in supporting inward investment to re-develop these areas and provide a sustainable means of transport for those people without access to a car.

1.3 Objectives of the Luton Dunstable Busway Scheme

1.3.1 The aims and objectives of the Busway scheme are in line with both national policy considerations and Local Transport Plan objectives, to deliver a system which:

- Provides an attractive alternative to car use for many journeys **(LDB 1)**.
- Maximises mobility and accessibility for all and is easy to use **(LDB 2)**.
- Reduces the environmental impact of transport in the towns and wider areas **(LDB 3)**.
- Provides improved safety from both a personal and technical viewpoint **(LDB 4)**.
- Reduces the impact of the wider transport network on the local community **(LDB 5)**.
- Contributes to the integration of land use and transport planning by supporting wider planning and regeneration policies and provides the maximum opportunities to interchange between different modes of transport **(LDB 6)**.

1.3.2 The Busway will assist other efforts to reverse the current decline in local public transport use and result in a shift away from car use , leading to reduced congestion and improved air quality. The Luton Dunstable Busway will:

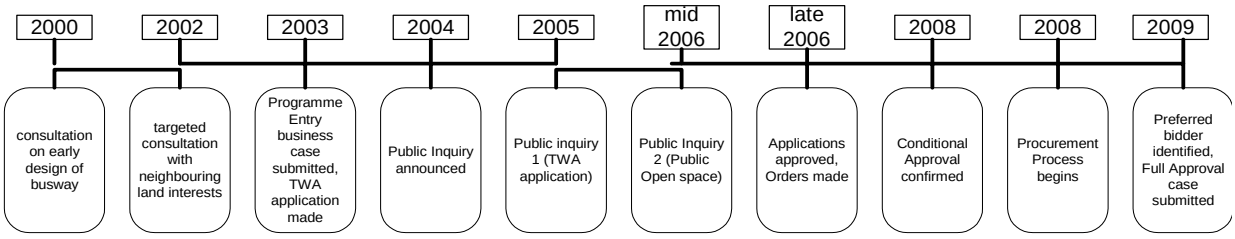
- Significantly improve the quality of bus provision within the Luton-Dunstable-Houghton Regis conurbation.
- Significantly improve bus journey times and reliability on key journeys within the conurbation, and in particular the heavily trafficked A505 corridor between Luton and Dunstable.
- Improve access and penetration by public transport from major residential areas to Luton, Dunstable and Houghton Regis town centres together with the major employment areas east of Luton including London Luton Airport.
- Improve and encourage greater integration between public transport services, in particular bus and rail.
- Provide an improved public transport link to London Luton Airport from within the conurbation for airport employees.
- Facilitate the introduction of complementary traffic control measures in and around Luton and Dunstable town centres.
- Provide a network of infrastructure and services that is flexible and can easily adapt/expand in response to changes in travel demands and land use patterns.

1.4 Development of the Guided Busway Proposals

1.4.1 In 1993 a transport strategy was adopted by Bedfordshire County Council, Luton Borough Council, and South Bedfordshire District Council which included as core components improvements to public transport services and re-use of the disused railway line.

1.4.2 Timescales for development of key stages in the development of the Busway scheme are summarised in Figure 1.1 below. Further information on the earlier stages of the process is included in Chapter 2 of the Conditional Approval Business Case.

Figure 1.1 Summary of the scheme development



1.5 OGC Gateway Reviews

1.5.1 Luton Council recognises the value that independent third party peer reviews can bring to projects, especially those which last for several years and has embraced the Gateway Review process for the Busway scheme. To date three reviews have been undertaken, and it is planned to take advantage of the future opportunities as the project progresses. It is intended that a Gate 4 Review will be undertaken during the commissioning phase once construction is substantially complete and a Gate 5 Review will be undertaken once the scheme has been operational for 12 months. The Gate 5 Review will further inform the monitoring and evaluation process described in Chapter 11 in measuring how forecast benefits are being realised. Any recommendations flowing from subsequent reviews will receive the appropriate levels of attention and action.

1.5.2 The first Gateway Review, a Gate 1 Review of the business justification for the scheme, was carried out in September 2007. A Gate 2 Review (readiness for procurement) took place in May 2008. Actions Plans were produced following these reviews and the accepted recommendations have been fully implemented.

1.5.3 A Gate 3 Review (investment decision) was carried out between 8th and 10th December 2009, and the Review Team included Graham Hughes from Cambridgeshire County Council. The team assessed the “Delivery Confidence” of the scheme as “Amber/ Green”. The Review team concluded that overall an effective procurement has been delivered with a solid evaluation, and there is good justification for the delivery route and the Preferred Bidder appointment.

1.5.4 Two of the six recommendations of the Review Team were identified as critical, namely developing arrangements for management of the advanced works to clear the disused rail corridor and detailed project and contract management structures for the implementation of the scheme. These have been developed and are summarised in Chapter 6 of this Business Case. The other recommendations related to suggested enhancements to the Benefits Realisation Plan, the communications and stakeholder management strategy, and the risk management process, although the current state of these was regarded as sufficient to achieve Full Approval. A copy of the Action Plan from this review will be submitted to DfT once it has been prepared & approved by the Project Board.

2 The Luton Dunstable Busway Scheme

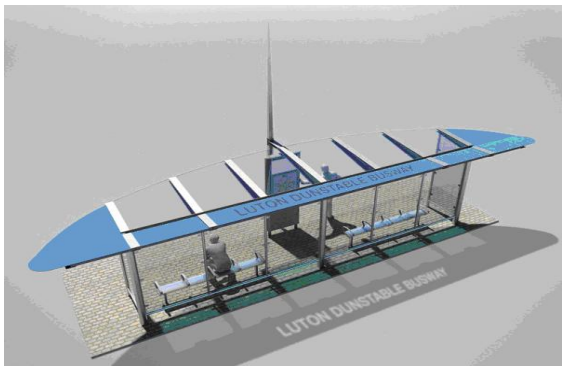
2.1 Overview of the Busway Scheme

2.1.1 The core segregated Busway route runs from Blackburn Road in Houghton Regis to Kimpton Road in Luton, together with on-street sections along Kimpton Road and Airport Way as well as routes which allow services to penetrate the town centres of Luton, Dunstable and Houghton Regis as shown in Figure 2.1. The route has access points for buses at Blackburn Road in Houghton Regis, at the bus-only link between Boscombe Road and Kingsway, at Church Street and at Station Road in Dunstable and at Skimpot Road, Chaul End Lane, the town centre and at Kimpton Road in Luton.

2.1.2 Stops on the Busway will be sited at the locations in Figure 2.1. In addition vehicles will stop at Bedford Square in Houghton Regis, in Dunstable town centre, in Luton town centre, along Kimpton Road, and at London Luton Airport. To give busway services priority where they run on roads, particularly around the town centres, traffic management measures will be introduced including new bus lanes, vehicle detection equipment and signalling. These measures will be carefully designed and monitored to ensure the optimal operation of the local road network.

2.1.3 The proposals for a new transport interchange to be sited adjacent to Luton railway station are being developed as part of the Luton Town Centre Transport Scheme (TCTS). Initial consultation on the layout of the new interchange has already taken place with local bus operators, and consultation will continue to take place as the interchange proposals are developed. However, given that the section of the bus-only road between Guildford Street and Church Street forms part of the Busway scheme, the Tender documents include for the possible construction of the new interchange under the contract for the design & construction of the Busway.

2.1.4 In addition to the stops on the Busway and the key transport interchanges described above, the scheme involves improvements to 265 existing stops on the highway network that would be used by guided buses. These stops will, as a minimum comprise platforms raised to bus floor level. Stops on the Busway will be long enough to accommodate a single bus up to 18 metres in length, and will be equipped with high specification infrastructure including shelters, static and real time passenger information, seats etc. They may also be equipped with ticket machines. The images below provide examples of the shelters and RTPI infrastructure at stops both on and off the Busway.



High Quality Shelter on the busway

Ibis interactive display

2.1.5 Other systems to assist those with disabilities are also being considered, these include RNIB React 3 and SNAPI smart card technology.

RNIB React 3 – digital voice announcer

SNAPI card (Special needs application programme interface)

2.2 Indicative Service Proposals

2.2.1 The development of an Indicative Service Plan (ISP) has been through a number of iterations since development of the scheme began in 1999. The bus network is a fluid entity, subject to ongoing change, and any service plan will inevitably show a degree of mismatch with the current situation soon after it has been established. Against this background a service pattern has been established which can be considered reasonably indicative of what is likely to be delivered, refinements will be undertaken at appropriate points as the scheme develops until a final agreed service plan is settled a few months before opening.

2.2.2 The ISP summarised here relates to the initial aspirations of the bus operators who have expressed an interest in running services along all or part of the Busway. The starting point for the ISP has been the current bus network.

2.2.3 The introduction of the Busway is assumed to impact on the provision of bus services in the following ways:

- It will introduce new Busway services to the network.
- New Busway services are assumed in some cases to replace or substitute conventional bus services operating prior to the busway being introduced.
- New Busway services are assumed, in some cases, to reduce the service frequency of conventional bus services operating prior to the introduction of the Busway.

2.2.4 Table 2.1 overleaf presents the Busway services to be introduced and the changes in conventional services as a consequence, based on initial views of the four operators who have expressed an interest in running services along all or part of the Busway.

Figure 2.1 Luton Dunstable Busway – core route

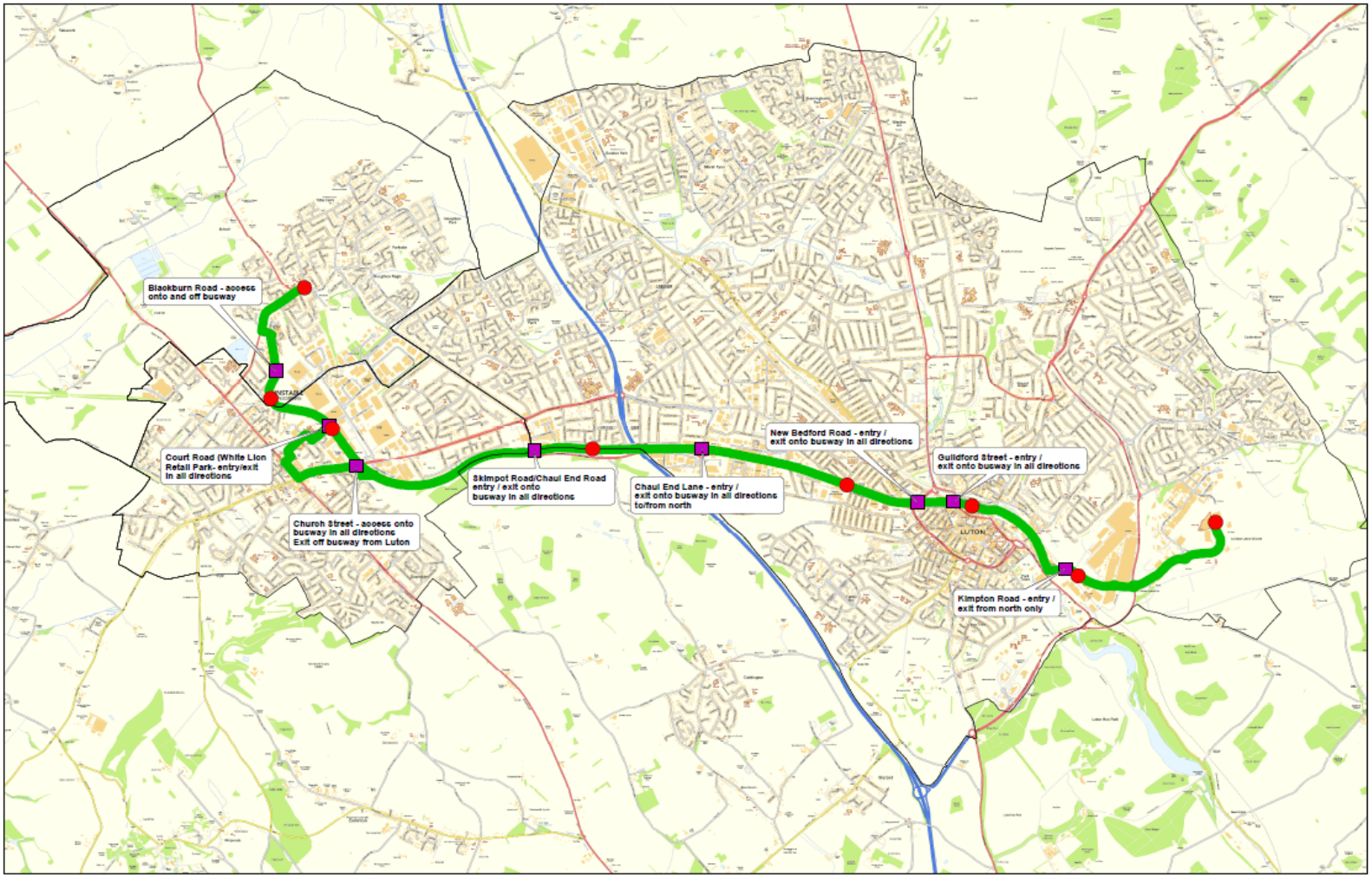


Table 2.1 Luton Dunstable Busway Indicative Service Plan

Route	Maximum Service Frequency (in each direction)	Comment
Houghton Regis TC, Dunstable TC, Luton TC	6 bus/hour	New service
Dunstable TC, Houghton Regis TC, Luton TC	5 bus/hour	Existing service will use section of the Busway between Chaul End Lane and Luton town centre
Downside, Dunstable TC, Luton TC	2 bus/hour	Existing service extended from Dunstable to Luton
Langdale, Dunstable TC, Luton TC	2 bus/hour	Existing service extended from Dunstable to Luton
Aylesbury, Dunstable TC, Luton TC, Luton Airport	1 bus/hour	Existing service will use section of the Busway between Dunstable town centre and Kimpton Road
Leighton Buzzard, Dunstable TC, Luton TC, Luton Airport	1 bus/hour	Existing service will use section of the Busway between Dunstable town centre and Kimpton Road
Leighton Buzzard, Dunstable TC, Luton TC, Luton Airport	1 bus/hour	Existing service will use section of the Busway between Dunstable town centre and Kimpton Road
Hatfield, Luton TC, Luton Dunstable Hospital, Leagrave	1 bus/hour	Existing service will use section of the Busway between Chaul End Lane and Luton town centre
Route	**Service Frequency**	**Comment**
Lewsey Farm, Luton Dunstable Hospital , Chaul End Lane, Luton TC	2 bus/hour	Service will only operate between Chaul End Road and Luton TC

2.2.5 The routes of the Busway services are shown in Figure 2.2. Given that the overall numbers of buses using each section of the Busway have not changed significantly compared to the enhanced service plan included in the Conditional Approval Business Case, in initial discussions with the DfT they indicated that it would not be necessary to undertake further runs of the public transport model in assessing the scheme benefits.

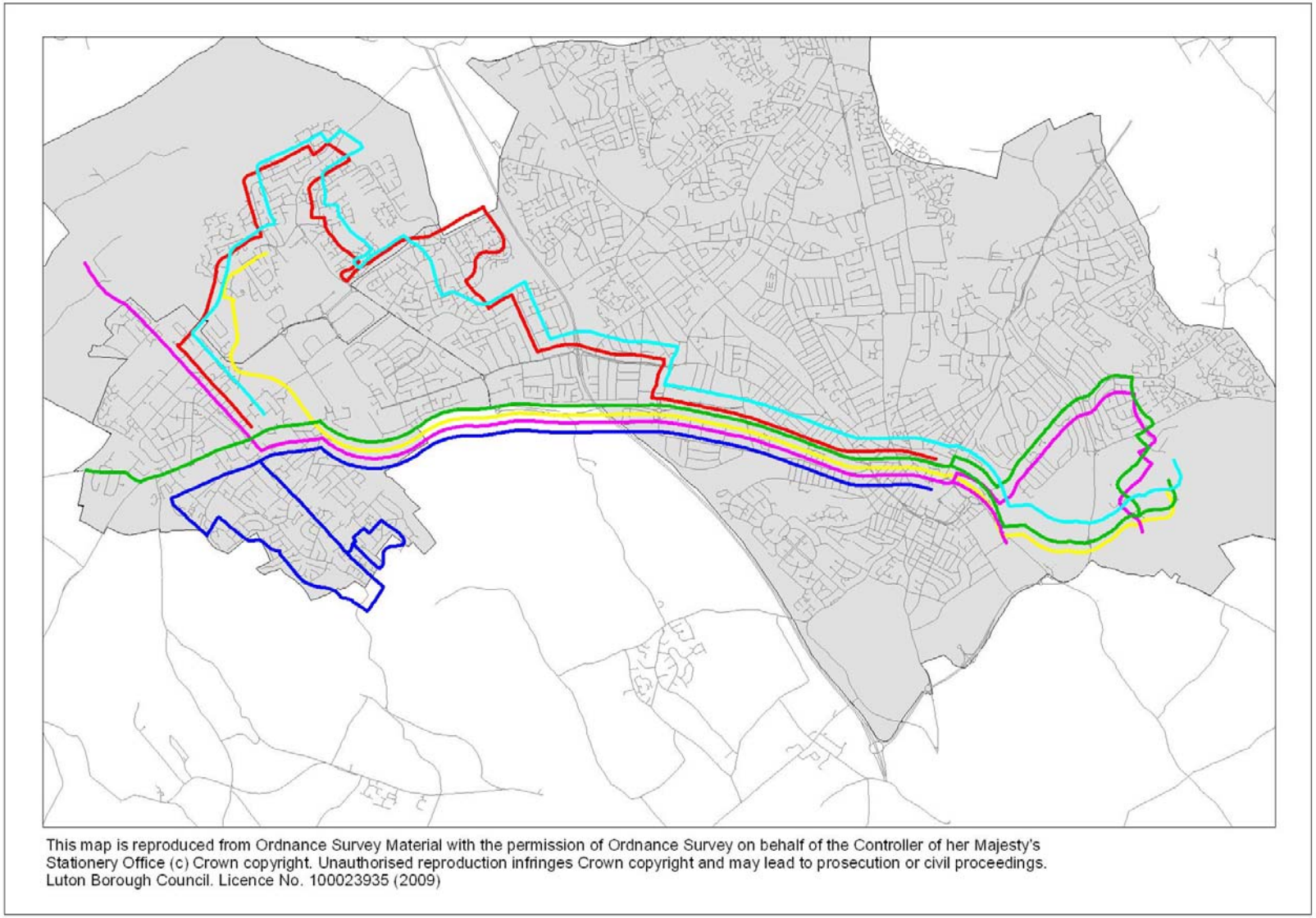
2.2.6 It should be noted that the ISP would result in an increase in the overall provision of services within the conurbation, albeit with some small reduction in service frequency on the A505 that parallels the busway in the Dunstable Town Centre-Luton Town Centre corridor.

2.2.7 It should be stressed that the actual service plan delivered as a consequence of the Busway's introduction will be subject to the view of operators at the time regarding the commercial viability of service operation, and the nature of any agreement or contractual arrangement secured between the Local Authority and local bus operators. Dialogue will be ongoing until a time close to the start of operation of the scheme and service proposals are likely to continue to evolve over this period.

2.2.8 It should also be noted that the service plan presented does not account for the potential use of the Busway by long distance coach operators where interest has been expressed by operators. These would be likely to utilise the section of Busway between Luton Town Centre and London Luton Airport.

2.2.9 There are no changes to the outline system specification that was discussed in Section 5.4 of the Conditional Approval business case and this is therefore not replicated here.

Figure 2.2 Busway Services



3 Strategic Transport and Planning Policy Context

3.1 Consideration of Scheme in Policy Context

3.1.1 The busway scheme has been developed in the context of European, national, regional and local policies that address planning and transport issues. The Busway accords with the wider policy framework and objectives as set out in the Luton-Dunstable Local Transport Plan (2006-11), which identifies improved public transport as being critical to achieving wider economic, social and environmental objectives that will benefit the community as a whole. The key principles of the Local Transport Plan (LTP) are an emphasis on the need to encourage travel by sustainable modes, integrate transport with other key policy areas, and to work in partnership with key stakeholders to develop and deliver the local Transport Strategy. The busway will provide improved journey opportunities to jobs, education and retail facilities and support measures to improve social inclusion and regeneration.

3.2 National Transport Policy

3.2.1 The New Approach to Appraisal (NATA) is the Government's recommended approach for improving the consistency and transparency with which decisions on all transport investment projects are made. This was first applied for trunk road schemes in 1998, and has since been revised to be suitable for the appraisal of all transport projects. It requires that the key economic, environmental, and social impacts of projects are presented in a clear, consistent, and balanced way.

3.2.2 In response to the Eddington Report and the Stern Review on the impact of Climate Change, in October 2007 the DfT published its new white paper for transport "Towards a Sustainable Transport System". The new white paper sets the context of transport improvements in the form of five goals, which are:

1. Supporting economic growth.
2. Tackling climate change.
3. Promoting equality of opportunity.
4. Contributing to better safety, security and health.
5. Improving quality of life.

3.2.3 There are three additional appraisal issues which are important to Government, but which do not fit easily within the above five transport objectives. The following issues reflect a more focused view of the implications of the proposed strategy or plan for particular groups of users, non-users, operators and public sector authorities. These issues are:

- Distribution and equity.
- Affordability and financial sustainability.
- Practicality and public acceptability.

3.3 Regional Spatial Strategy and Regional Economic Strategy for the East of England

3.3.1 At the time of the Conditional Approval submission, the Regional Spatial Strategy (RSS) for the East of England, which includes the Regional Transport Strategy (RTS), had been through an Examination in Public (EIP). In December 2006 the Government published its proposed amendments to the RSS, but the final RSS was not published until May 2008. However the RTS policies contained within the RSS did not change significantly between the proposed amendments and the adopted RSS.

3.3.2 The RSS is currently being reviewed. Particularly in the light of greater emphasis of Government policy in reducing the impacts of climate change, together with the target in the Regional Economic Strategy (RES) to reduce carbon emissions by 60% by 2031 (compared to 1990 levels), the RSS review is likely to place greater emphasis on Transport Policies within the RSS that manage travel behaviour and the demand for transport, with the aim of

reducing the rate of road traffic growth and ensuring the transport sector makes an appropriate contribution to the required reduction in greenhouse gas emissions.

3.3.3 The TEES study undertaken by EEDA in 2008 included an initial assessment of the impact of transport in reducing CO_2 emissions in the Region. A parallel study, the Regional Economic Strategy's 'Resource-use and CO_2 Emissions Modelling Report' suggests that the Region's transport carbon emissions could rise between 2% and 9% under a range of scenarios. During 2009, EEDA commissioned the Transport and Carbon Study (TraCS), the purpose of which was to undertake further work to quantify the current and future impact that transport has on total carbon emissions in the Region, identify a realistic target for transport's contribution to the regional carbon reduction target, and outline in detail how this can be achieved and the wider economic impacts of doing so.

3.3.4 The TraCS study reviewed the impact of the "Business As Usual" option considered in the RES, together with three other scenarios. Scenario 1 was consistent with Government guidance published in August 2008 comprising three elements; supporting a shift to low carbon technologies and fuels, promoting low carbon transport choices, and using market mechanisms. Scenario 2 placed greater emphasis on strong investment in sustainable modes and demand management, and Scenario 3 emphasised strong support for switch to low carbon vehicles/fuels and very strong support for promoting low carbon choices. It can be concluded from this assessment that the increased travel resulting from the planned growth of the area/region has no overall impact in reducing CO_2 emissions unless more drastic measures are introduced to reduce emissions from the transport sector, then reductions from other sectors will be necessary to achieve the RES target.

3.4 Milton Keynes and South Midlands (MK/SM) Sub Regional Strategy

3.4.1 The Milton Keynes/South Midlands (MK/SM) sub-region is one of four growth areas identified in the Government's Sustainable Communities Plan, published in February 2003, to provide 200,000 new homes in the South East of England above those already planned. A draft of the MK/SM sub regional strategy had already been to EiP in early 2004 and the final strategy approved in March 2005, prior to the time of the Conditional Approval submission.

3.4.2 The Luton/Dunstable/Houghton Regis conurbation, together with Leighton Linslade, has been identified as a growth area within the sub-Regional strategy. The sub-Regional strategy indicates that an additional 26,300 dwellings (including committed sites) should be provided in the conurbation in the period to 2021, with a further 15,400 homes by 2031.

3.4.3 Growth areas in the Luton, Dunstable and Houghton Regis conurbation are noted as being potentially highly accessible by public transport. The Busway is identified in Policy 2 of the Part B statement for Bedfordshire and Luton as one of the schemes essential to meet the existing and future needs of the Growth Area.

3.4.4 In October 2009 a Transport Strategy was published for the MK/SM sub region. That strategy referred to the role that major bus priority measures within the key towns in the sub-region could have on improving the journey time reliability of both intra- and inter-urban bus services. The MK/SM transport strategy specifically mentioned the role that the Busway could play in improving journey time reliability for Luton- Aylesbury and Luton-Leighton/Buzzard/Milton Keynes services. The Busway scheme will be a cornerstone of the MK/SM inter-urban bus and coach strategy recently agreed by the MK/SM Transport Board.

3.5 The Luton and South Bedfordshire Local Development Framework

3.5.1 In July 2007, Luton Borough and South Bedfordshire District Councils published an issues and options document that identified possible options for the location of new development in the Growth Area. Public consultation into those options took place between July and October 2007, following which the Councils published their emerging preferred Core Strategy for the Growth Area in March 2009. Following public consultation into this preferred option during Spring 2009, a Pre-submission version of the preferred strategy is due to be published in early 2010.

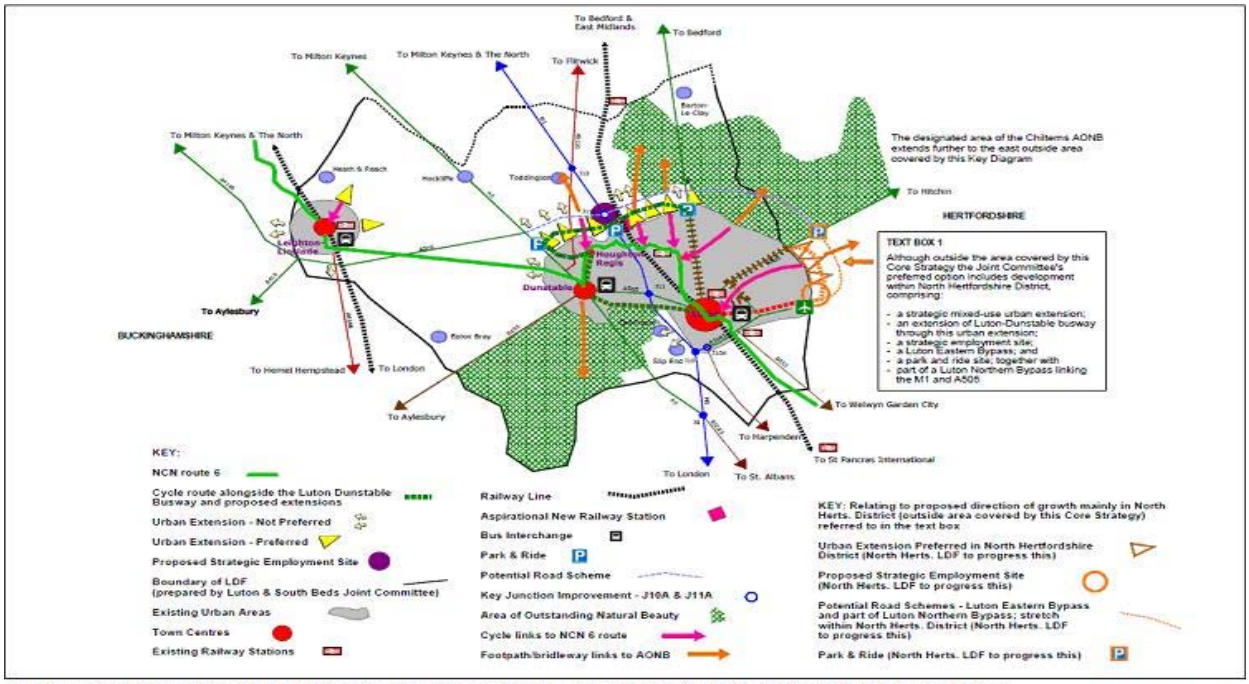
3.5.2 The alignment of the Busway passes close to a number of development sites identified in the Luton Local Plan (adopted in March 2006) and the South Bedfordshire Local Plan (adopted in January 2004), together with other sites that have been subject of Planning Applications. The main sites (see Figure 3.2 overleaf for locations) include:

- At least 1000 residential units at Napier Park on the disused Vauxhall Motors site on Kimpton Road.
- A mixed use commercial/residential development on the Power Court site.
- About 300 residential units and some commercial development on the Luton Gateway site just south of Luton station.
- About 200 residential units at Chiltern Park off Skimpot Lane (phase 1 completed).
- 450 residential units on the Dukeminster industrial estate.

3.5.3 The preferred strategy for the Luton and South Bedfordshire Growth Area includes a number of significant potential development areas to the north of the existing conurbation of Luton Dunstable Houghton Regis. The Busway will provide the flexibility of being extended to enable public transport to serve these potential development sites to the north of the conurbation, and as part of a wider Public Transport strategy including Park and Ride at strategic locations.

3.5.4 The Councils are currently preparing the Local Development Framework (LDF) for Luton and South Bedfordshire, which sets out the location and overall layout of proposed development and related infrastructure to cater for the planned growth of the area of around 43,000 new homes and 35,000 new jobs in the area by 2031. The emerging LDF indicates that the preferred location of some of this development will be as extensions to the existing urban area, in particular to the north of Luton Dunstable and Houghton Regis. To maximise the opportunities for sustainable travel from new development in these areas, it is planned that there will be extensions of the current Busway to serve these areas, together with Park and Ride sites on the key radial routes into the three towns from the north. A schematic plan of the location of the proposed development, together with the related transport infrastructure, is shown in Figure 3.2 below.

Figure 3.2 Luton and South Bedfordshire LDF Core strategy-strategic transport infrastructure



Date: 15 : 04 : 2009
NOT TO SCALE

4 Busway Costs

4.1 Background to the cost appraisal

4.1.1 This chapter sets out the development, capital and operating cost components that are included in the economic and financial appraisal of the Busway scheme, which includes:

- Infrastructure Implementation Capital costs:
  - Development costs that qualify for re-imbursement.
  - Land/property acquisition and compensation.
  - Infrastructure design, construction and supervision.
  - Ecological mitigation.
- Infrastructure capital renewals.
- Vehicle capital costs (including replacements, costs avoided and residual values).
- Operating costs:
  - Bus network operating/maintenance costs.
  - Infrastructure operating/maintenance costs.

4.1.2 The cost items to be funded by the Government relate to sections 4.2-4.6 below. The other cost elements referred to in sections 4.9-4.12, whilst not part of the capital costs of the scheme for which Government funding is required, are taken account of in the economic appraisal and are included here for completeness.

4.1.3 The Busway Contract will include the construction of the new bus interchange in front of Luton Station. However the new interchange is being funded through the third round of the Government's Growth Area Fund (GAF3) and is therefore excluded from the cost appraisal for the Busway scheme.

4.1.4 The approach taken to costing risk has varied for the different categories of costs described above. For example risk pricing of:

- Busway construction is based on the priced activity schedules and tendered risk registers.
- Land costs is based on October 2009 prices including a 15% contingency together with the Quantified Risk Assessment submitted for the Conditional Approval adjusted in line with the latest estimate of land costs.
- Part 1 Compensation costs have been based October 2009 prices including a 20% contingency together with the Quantified Risk Assessment submitted for the Conditional Approval adjusted in line with the latest estimate of Part 1 compensation costs.
- Upgrading of on-street stops has been based on prices quoted by Volker Highways and Amey including a 10% contingency.

4.1.5 Further details on the risk/contingency costs are therefore included in each of the following sections of this chapter. Furthermore, it should be noted that, because this Business Case submission is for Full Approval of the Busway scheme, a value of 3% for Optimism Bias has been used, as advised by the Department for Transport.

4.2 Busway Implementation Costs

4.2.1 The scheme infrastructure implementation costs are based on the prices submitted for the various work-streams outlined in Table 1.1 and include the tendered prices of the Council's preferred contractor. The Busway Contract includes the costs of accommodation works for Luton Town Football Club, the construction of a cycleway adjacent to the Busway east of the M1, and for the bus only road and stops (but not the full bus interchange) outside of Lutobn station. The costs also include just under £2.523 million for the tendered risk registers.

Table 4.1 Busway Implementation Cost Breakdown

ADVANCED WORKS	
Advanced works (site investigation and orchid/slow-worm translocation)	**£450,327**
BUSWAY WORKS	
Site establishment/ other prelims	£11,539,912
Further site investigation	£137,190
Design development	£1,983,067
Construction	£15,860,247
Structures	£3,959,494
Retaining walls	£1,513,232
Demolition of structures	£331,258
Highway works	£1,278,164
Statutory Undertakers works	£6,043,783
Landscaping	£885,784
Sub total	**£43,532,131**
Costed risk registers	£2,522,425
Fees	£4,582,428
Total Busway works	**£50,636,983**

4.3 Implementation costs of on-street bus stop improvements

4.3.1 An integral part of the LDB project is the improvement of bus stops in residential areas and the town centres that would be served by buses using the Busway. There are 150 bus stops to be improved in Luton and 115 in Central Bedfordshire. As these works involve improvement of stops on existing roads, they are best procured using the term contractors from the two authorities (Volker Highways in Luton and Amey in Central Bedfordshire), allowing the main works contractor to focus his efforts on the key segregated route.

4.3.2 Engineers from Luton and Central Bedfordshire have undertaken a review of the transition kerb design at the stops to enable docking and level boarding by vehicles fitted with guidewheels, and prepared a cost estimate for this work. A standard layout drawing has been prepared for many of the stops, although in cases where this design is inappropriate separate drawings have been prepared.

4.3.3 All stops will have new footway works, carriageway marking and coloured surfaces. Bus shelters have been specified for many of the stops. Cost estimates have been prepared for the 265 stops to be upgraded, and these estimates include the items described above plus allowances for design, consultation, CDM, supervision and contingency. The total cost of this work is £4,678,147at 2009 prices, including a 10% contingency and an allowance for inflation given that works to the on-street stops will not commence until early 2011/12.

4.4 Implementation costs of RTPI and communications infrastructure

4.4.1 Luton Borough and Central Bedfordshire Councils are members of a sub-regional consortium for the provision of Real Time Passenger Information (RTPI), of which the other partners are Bedford Borough, Cambridgeshire County and Peterborough City Councils. ACIS are currently the RTPI provider to the partnership, and were selected by competitive tender.

4.4.2 The Busway project team have been in discussions with ACIS in order to determine the optimal way to provide RTPI and communications to the main bus stops along the Busway corridor (Clifton Road, Toland Close, White Lion Retail Park, and Portland Ride), as well as at key interchanges (Luton Airport, Napier Park, Luton Central Station, Dunstable town centre and Bedford Square in Houghton Regis) and other on-street bus stops.

4.4.3 Real Time Passenger Information displays have been included at all stops in the form of IBIS units (or similar). They are able to provide functionality in addition to timetable information and RTPI, such as displaying journey information/route maps, advertising and community information. The IBIS unit is DDA compliant and supports smart ticketing

solutions, is highly vandal resistant and is competitively priced. In areas of higher passenger activity the IBIS display would be supported by a shelter mounted 3 line LCD unit.

4.4.4 The current Private Mobile Radio (PMR) system used for RTPI in the area is not capable of providing the digital communications needed for the enhanced facilities provided by the IBIS RTPI units or the requirements for supporting stop infrastructure such as help points, CCTV and ticketing. Extension of the existing PMR system was therefore not considered a feasible option for the stop infrastructure required for the segregated Busway and three alternatives options were considered:

- Option 1 - Wireless mesh to serve both the Busway and the on-street stops.
- Option 2 - Fibre optic cable along the busway with GPRS communications (Sim card technology) to the on-street stops.
- Option 3 - Fibre optic cable with Last Mile Microwave Wireless to the on-street stops.

4.4.5 The outcome of this review was reported to both the Project Management Group and the Project Board in Spring 2009. In considering the lack of functionality of the existing PMR system, and the high risk and high capital costs of options 1 and 3, the Project Board resolved to support option 2 as the preferred communications solution to support the Busway and off route stops. This is a relatively low risk solution, is easily deliverable and offers certainty of cost. However there are some ongoing revenue costs associated with providing GPRS communications to the off route stops and these will be covered by the two Councils.

4.4.6 The total capital costs of the RTPI displays and the fibre optic cable is £2,581,054 at 2009 prices, including scope and tender contingency and an allowance for inflation given that works will not commence until late 2011.

4.5 Project management and supervision costs

4.5.1 In May 2009, the Council published an OJEU notice seeking tenders for supervision of the works and providing specialist project management support through the construction phase of the project. As a result of this competitive tender, in August, Atkins were appointed to this role.

4.5.2 In addition the contractual Project Manager and other members of the Project team will be based on-site for the duration of the works. The total cost of the Councils' Project Management and site supervision arrangements for the duration of the design and construction is estimated to be £3.900 million in 2009 prices.

4.6 Land/Property Acquisition and Compensation Costs

4.6.1 Land and property acquisition and compensation costs are derived from valuations made by local authority surveyors in Autumn 2009 based on the land-take requirements associated with the scheme design, construction and ecological mitigation. Land and property acquisition costs are phased between 2009 and 2011. Compensation costs are phased through to 2019 to cover the period allowable for Part 1 compensation claims to be made following opening of the scheme.

4.6.2 The land and property acquisition and compensation estimate at 2009 prices is summarised in Table 4.2 overleaf, including a risk allowance of just over £2.763 million.

Table 4.2 Land and compensation costs

Cost Component	2009 prices
Land and compensation costs	£9,368,650
Agents / Legal fees	£782,650
Part 1 Claims	£6,514,700
Third party Legal and Surveyors Fees	£724,000
LBC/CBC Legal and Surveyors Fees	£600,000
Sub total land and compensation costs	**£17,990,000**
Quantified Risk Assessment allowance	£2,763,369
Total land & compensation (inc risk)	**£20,753,369**

4.6.3 Key assumptions made in deriving the estimate have been:

- The cost of the disused rail corridor is agreed with BRB (residuary), and the Council are currently in the process of acquiring this land.
- The estimates for other land, material detriment, and compensation are provided on the basis that owners/lessees and their advisors seek to achieve the highest possible purchase price for their interests and any changes thereto.
- Land and Compensation Act (Part 1) payments are based on 75% of all properties within 100m of the busway being compensated, with this boundary being extended to 200m where the Busway will be on embankment.
- It should be noted that Table 4.2 includes a contingency of 15% for land acquisition costs and 20% for Part 1 compensation claims. The rationale behind this higher contingency is that, due to the current state of the property market, it is more difficult to forecast what prices might be at a future point when Part 1 claims become allowable, although it is expected that property prices will have risen by that time.

4.6.4 Environmental mitigation costs have been estimated as £2.387 million in 2009 prices, including contingencies and inflation. The estimates include the cost of managing the various mitigation sites remote from the main busway estate in accordance with management plans developed by the Environmental Forum. It also includes the management of replacement open space sites and other environmental management costs.

4.7 Contributions

4.7.1 There is a requirement for the Councils to fund 10% of the scheme cost from local contributions and this represents a total of about £8.920 million towards the cost of implementing the Busway. Of this, just over £1.995 million has already been funded by the two Councils by way of preparatory costs which will not be recovered, and Central Bedfordshire Council have committed to covering the costs of implementing bus priority measures to facilitate effective Busway operation in Dunstable Town Centre. The cost of these works is estimated at £1.1million, and would be incurred in 2010/11 and 2011/12.

4.7.2 A number of developer contributions have been secured towards the cost of delivering the Luton Dunstable Busway scheme. Copies of the relevant Section 106 agreements were included in Appendix L of the Conditional Approval Business Case. The total value of local developer contributions secured to date is £3,400,400, comprising:

- £3,000,000 from the developers of Napier Park.
- £230,000 for land reserved at Asda in Dunstable.
- £90,000 for a retaining wall to the rear of Chiltern Park off Skimpot Road in Dunstable.

- £40,000 for a pedestrian/cycle link between Leicester Road and Chaul End Lane from a housing development on Leicester Road.
- £20,000 for a pedestrian link between the White Lion retail park stop and housing development on the Dukeminster estate in Dunstable.
- £20,400 from the developers of the Station Road site in Dunstable.

4.7.3 Together these contributions reduce the capital grant to be sought from Central Government, although they still require the Councils to secure the remaining £2.425 million to make up the 10% local contribution. Other opportunities for contributions continue to be pursued by the promoters, most notably with respect to developments planned in proximity to the Busway scheme e.g. the proposed Power Court development in Luton Town Centre.

4.8 Summary of Capital costs

4.8.1 The costs included within the Tables in this section only cover the implementation costs of the guided Busway, together with additional costs of the improvements to on-street stops served by Busway services (including RTPI and communications infrastructure), land and compensation costs, and other costs as set out in sections 4.2-4.6.

4.8.2 Table 4.3 below summarises the total capital costs of the scheme in cash-flow values. It should be noted therefore that the prices for on-street stops / RTPI, supervision, and land/compensation costs are higher than the 2009 price base costs set out in sections 4.3-4.6 above.

Table 4.3 Summary of Capital Costs in cash-flow

Advanced works	£450,327
Total Busway works	£50,636,983
Bus stop works	£4,706,997
Communications & Technology	£2,590,293
Sub total works costs	**£58,384,600**
Land and compensation	£24,230,473
Ecological mitigation	£2,470,879
Client Project Management & Supervision Costs	£4,116,690
Total Capital Costs (inc risk and inflation) in cash-flow	**£89,202,642**

4.8.3 The Department for Transport are asked, in approving this submission, to fund 90% of the total scheme costs, together with 50% of the preparatory costs. The balance of funding will be through local contributions, which are set out in section 4.7 above. Table 4.4 below summarises the spend profile of the Government funding and local contributions.

Table 4.4 Phasing of Capital Costs (£'s)

	Prep Costs	2009/10	2010/11	2011/12	2012/13	2014/15	2015/16	2016/17	2017/18 on	Total
DfT funding	1,995540	2,504460	15,998199	43,115902	5,957007	195180	1,616087	2,927137	5,972866	80,282378
Local Authority contribution	1,995540			1,100000						3,095540
Developer contribution			3,000000	2,424324	400400					5,824724
Total Funding	**3,991080**	**2,504460**	**18,998199**	**46,640226**	**6,357407**	**195180**	**1,616087**	**2,927137**	**5,972866**	**89,202642**

4.8.4 Table 4.5 below presents the phasing of land and construction cost items for the scheme. The monthly phasing of costs is based on the timetable in the Preferred Contractors Tender submission. Spend starts on award of the Contract in early February 2010, and the Busway is planned to open in early May 2012 following three months of commissioning and testing of the Busway and associated infrastructure. Part 1 compensation costs will cover the period 2013-19, again as set out in section 4.6.

4.8.5 Table 4.5 is set out in the format requested by the Department. However, as the costs now include both tender prices and other cost estimates and are specified in different price bases, and include risk allowances, it is not possible to complete the first two columns of the table (setting out pre- and post- risk adjusted 'engineers' estimates). However, the remainder of the table, providing risk adjusted out-turn or cashflow costs, with and without the optimism bias premium and discounted to 2002 market prices are shown.

Table 4.5 Appraisal Cost Proforma Summary Sheet

Assumptions:

Price Year Base (Earliest - 1998)	Cash-flow or 2009

Investment cost optimism bias (%)	3

QRA P(80) (total)	N/A
QRA P(50) (total)	N/A

Financial Year	Investment Cost (2007 base year cost, excluding risk)	Cost including real cost inflation (Base Cost)	Risk adjusted cost using QRA P (95)	Risk adjusted cost including Optimism Bias	Risk adjusted cost including OB deflated and discounted to 2002 Market Prices
2008/09	See Para 4.8.4	See Para 4.8.4			
2009/10			£4,500,000	£4,635,000	£3,423,358
2010/11			£20,993,739	£21,561,751	£15,970,909
2011/12			£46,640,226	£48,039,433	£33,445,392
2012/13			£6,357,407	£6,548,129	£4,927,258
2013/14			£0	£0	£0
2014/15			£195,180	£201,035	£117,224
2015/16			£1,616,087	£1,664,569	£914,921
2016/17			£2,927,137	£3,014,951	£1,562,060
2017/18			£3,029,587	£3,120,474	£1,523,961
2018/19			£2,239,730	£2,306,922	£1,061,993
2019/20			£463,624	£477,533	£207,218
2020/21			£239,925	£247,123	£101,082
Totals:	£0	£0	£89,202,642	£91,878,721	£62,625,378

4.9 Maintenance

4.9.1 Ongoing management of the Busway will be required for both general operational purposes, maintenance and repairs. The Busway Contractor will be responsible for any defects (including landscaping) for the first five years from hand over. Subsequent repair of any minor defects to the guideway (e.g. repairs to cracks) will be covered by annual maintenance. The Councils are committed to bear the ongoing revenue costs associated with operating and maintaining the scheme.

4.9.2 Similarly, any major defects up to 12 years from handover would be covered by the contractual arrangements. Major infrastructure renewal, which would relate to the need to completely replace whole sections of the guideway beyond the first 12 years would be subject of further submissions to the DfT, possibly covered by an exceptional maintenance bid.

4.9.3 Any on-highway infrastructure in Luton and Central Bedfordshire will be maintained under each Council's respective asset management plans. A maintenance management plan is being developed for the Busway; maintenance tasks will include periodic inspections, together with winter maintenance, landscaping maintenance (e.g grass cutting and trimming of trees/shrubs), cleaning of signs and shelters, ad-hoc repairs, and operation of a recovery vehicle for clearance of breakdowns. The basic principle underlying the plan is that the maintenance regime should be sufficiently robust to ensure that the public perception of the scheme is one of a high quality public transport facility.

4.9.4 Until the detailed design of the Busway is complete, there is insufficient information available to provide a robust annual maintenance figure. Therefore at this stage of its development, the maintenance management plan for the Busway sets out the standards for the condition of the Busway and inspection and assessment surveys can be considered in the following categories; Safety Inspections, Service Inspections, and Structural Condition Surveys.

4.9.5 The annual maintenance costs for the Busway and associated infrastructure is anticipated to be around £438K per annum. In addition to this, as the busway will be retained as a private asset of the Councils and not part of the public highway, rates will be payable. Early discussions with the Valuation Office Agency have indicated that an annual rates bill in the region of £45k is a realistic expectation.

4.9.6 Some of the estimates are based on guideline unit schedules of rates. There is a risk that if maintenance is tendered the unit rates will differ significantly from those on which this estimate is based. Furthermore, the item coverage for the existing unit rates might not suit the specific needs of the guideway; for example if access were to be felt difficult or if possessions of the Busway were necessary and only permitted during particular hours then unit rates would go up. Similarly cost could also go up if a bogey vehicle was needed for a given task and delays were suffered in awaiting its availability.

4.10 Vehicle Capital Costs (Including Replacements, Costs Avoided and Residual Values)

4.10.1 The net vehicle capital costs will equate to the costs incurred by operators, over the project life, on vehicles required to operate Busway services, less the cost operators would have incurred on the vehicles required to operate the services the Busway replaces.

4.11 Busway Impact on Vehicle Requirements

4.11.1 The method for determining vehicle requirements adopted allows for layover time, in addition to an allowance for spares, to be accounted for explicitly in the calculation of vehicle requirements.

4.11.2 A calculation has been made for vehicle requirements including spares and a 15% allowance has been included on the advice of operators fro the existing conventional bus fleet and 20% for the Busway fleet. The method used is consistent with the outcome of the scheme appraisal review undertaken for DfT by Arup in 2002. Table 4.6 presents the resultant calculation of vehicle requirements.

Table 4.6 Calculation of Busway Vehicle Requirements

	Vehicle Requirements (exc. spares)	Vehicle Requirements (inc. spares)
Bus Do Minimum	100	114
Bus Do Something	85	97
Busway	24	29

4.12 Estimate of Vehicle Capital Costs Associated with the Busway

4.12.1 The net vehicle capital costs will equate to the costs incurred by operators, over the project life, on vehicles required to operate Busway services, less the cost operators would have incurred on the vehicles required to operate the services replaced by Busway services.

4.12.2 Estimates of vehicle capital costs are calculated on the following basis:

- The number of new high quality low floor Busway vehicles modified for use on Busway was identified based on calculating the number of vehicles to operate the service plan routes at the specified frequency. Each vehicle is estimated to cost £250,000 in 2007 prices.
- It is assumed that these new Busway vehicles will be replaced every 10 years with new vehicles, assuming the real cost of vehicles remains constant at £250,000 in 2007 prices.
- The replaced Busway vehicles were assumed to have a residual value to operators of approximately £125,000 per vehicle (2007 prices), and this was based on standard bus industry practice of linear depreciation, over a 20 year vehicle life.

- Where Busway services were assumed to replace existing bus routes the buses immediately replaced were assumed to have a residual value to the operators for use elsewhere on their networks. This was assumed to be approximately £70,000 (2007 prices). This is a value that could be offset against the capital expenditure on new Busway vehicles in the first instance.
- It was assumed that the operators of these existing buses would have replaced these vehicles on a rolling 8-year cycle with the value of new replacement buses being £150,000 (2007 prices). This was a vehicle capital cost that would now be avoided by the operators.
- The residual value of the replaced buses to operators would be approximately £70,000 (2007 prices) assuming 15 year linear depreciation, would not now be realised by operators and was deducted from the cost saving associated with not having to replace existing buses substituted by Busway services.

4.12.3 These assumptions when combined with the vehicle requirements identified in Table 4.6 to allow the cash-flows presented in Table 4.7 below to be derived for use in appraisal.

Table 4.7 Vehicle Capital Investment Cashflows used in Appraisal

Cashflow	Undiscounted (2002 Market prices) - = cost to Operators + = benefit to Operators	Phasing
New and replacement Busway vehicles	-£7.51M	2012 and then every 10 years thereafter
Residual value to operators of Busway vehicles replaced	+3.75M	2022 and then every 10 years thereafter
Residual value of conventional buses initially replaced by Busway vehicles	+£1.27M	2012 only
Cost of replacing conventional buses now replaced by Busway vehicles that is avoided by operators	+£0.34M	2012 and then every year thereafter
Residual value of replacement conventional buses that are no longer required that is no longer realised by operators	-£0.16M	2020 and then every year thereafter

5 Assessment Against Central Government Objectives

5.1 Criteria

5.1.1 The assessment is based on the five central Government objectives of environment, safety, economy, accessibility, and integration. A summary of this assessment is provided in the Appraisal Summary Table (Table 5.7) at the end of this chapter.

5.1.2 Many of the five current assessment objectives are consistent with the five TaSTS goals. The main exceptions to this are the inclusion of equalities and health impacts within the assessment framework. Over the last year, the Council has undertaken both Equalities and Health Impact Assessments for the Busway scheme, and the key outcomes of these assessments are referred to in this chapter.

5.2 Environment

5.2.1 A full Environmental Impact Assessment (EIA) was submitted with the Transport and Works Act (TWA) Order application.

5.2.2 The environment section of the Conditional Approval submission outlined the baseline environmental conditions, together with the main impacts of the construction/operation of the Busway and how those impacts will be mitigated. Given that the environmental impact of the Busway has not changed, this information is not repeated in this submission, although the environmental impacts are summarised in the AST at the end of this chapter.

5.3 Safety and security

5.3.1 This section presents the assessment of the Busway against the Government's Safety Objective, through analysis of the following sub-objectives:

- Reduction in the number of Accidents.
- Improvement in passenger security.

5.3.2 Given that the service plan and the expected demand have not changed significantly since the Conditional Approval submission, the reduction in the number of accidents together with the impacts of operational safety and pedestrian safety are not considered further in this submission, although they are summarised in the AST at the end of this chapter. The rest of this section therefore concentrates on the impact of the stop infrastructure will have in contributing to passenger security.

5.3.3 Passenger security is a fundamental component of any quality public transport scheme. Positive perceptions of personal security are vital in attracting patronage, particularly from vulnerable users. High quality security measures therefore contribute to the accessibility and social inclusiveness criteria within the appraisal framework.

5.3.4 The design of the Busway will incorporate a high level of passenger security features and bring them into operation across a significant portion of the bus network. Measures to enhance passenger security include the provision of measures such as CCTV, passenger help points, enhanced passenger information and lighting.

5.4 Accessibility, equalities and health impacts

5.4.1 This section presents the assessment of the Busway scheme against the Accessibility objectives, including the equalities and health impacts. Given that the services using the Busway have not changed significantly compared to the enhanced ISP included within the Conditional Approval Business Case, the Accessibility assessment remains as set out in Section 5.7 of the Conditional Approval Business Case.

5.4.2 Luton Borough Council undertakes Equalities Impact Assessments (EIAs) for all of its local transport policies and programmes. The EIA undertaken for the Busway scheme concluded in particular that the proposed stop infrastructure (see Paragraph 2.2.6), together with

investment of operators in low floor vehicles and driver training as part of a Quality Partnership agreement with the Councils, will result in significant improvements and address many of the barriers to travel experienced by women, elderly and disabled people. A copy of the EIA is included at Appendix A.

5.4.3 A copy of the Health Impact Assessment (HIA) undertaken for the Busway scheme is included at Appendix B. The HIA reached similar conclusions to the EIA in terms of the proposed stop infrastructure encouraging more people to facilities at stops both on and off the Busway, which would contribute to improving the health and well-being of vulnerable groups of people. However the HIA concluded that more could be done to:

- Improve the provision of timetable information for BME groups, such as the use of pictorial representations of key destinations.
- Ensure that bus drivers and other staff recognize the needs of particular groups of people particularly mothers with young children and elderly and disabled people, providing a greater degree of customer care, particularly when these people are boarding and alighting.

5.4.4 The opportunities to encourage greater use of Busway services to access other services and facilities in the town will arise from ticketing initiatives including:

- Discounted bus season tickets for staff working in key employment areas such as London Luton Airport and the east Dunstable employment area, with employers perhaps providing interest-free loans to staff.
- The discounted costs of bus travel being included as an “add on” to college fees to encourage students attending further education to travel by bus to places like Dunstable College.
- The discounted costs of bus travel being included as an “add-on” to tickets at leisure facilities, or reduced entry prices if you travel to such facilities by public transport.

5.4.5 Bus services funded by major employers could provide a service for staff, particularly in areas not directly served by public transport. For example there are a number of airport employees that live in the north of Luton that could benefit from a dedicated airport employee service.

5.4.6 In addition, facilities such as changing rooms and lockers at the workplace could encourage more employees to walk/cycle to work, particularly in areas such as east Dunstable where the access track adjacent to the Busway will provide a valuable addition to the walking and cycling network in the area.

5.5 Economic efficiency and appraisal

Transport Economic Efficiency

5.5.1 The approach adopted to deriving TEE tables is discussed in the Conditional Approval submission, and is not repeated in this final Business Case because the process has not changed.

5.5.2 Details of the resulting PVs and TEE tables, along with the associated undiscounted and discounted cashflows for the Most Likely, Pessimistic and Optimistic Scenarios are provided in this section. The Treasury Green Book Appraisal indicates that analysis of some environmental aspects of a scheme (eg noise, air quality, journey ambience, reliability) can be monetised. The improved journey ambience and reliability are dealt with in part by the application of a mode specific constant for Busway services, as set out in paragraph 7.3.4 of the Conditional Approval Business Case. The monetisation of costs and benefits has not been applied to noise or air quality as these impacts are only slight. The TEE tables presented in this section are therefore structured in a way that combines the requirements of economic efficiency, public accounts and analysis of monetised costs and benefits (AMCB) in a single table.

Economic Appraisal Assumptions

5.5.3 Table 5.1 presents the assumptions adopted in undertaking the appraisal. This table remains broadly the same as that reported in the Major Scheme Business Case Update for Conditional Approval submission, except in respect of:

- To the assumed busway service plan (which is largely similar to the Enhanced Indicative Service Plan reported in section 12 of the Conditional Approval Major Scheme Business Case submission).
- the principal construction costs which are based tender prices of the Council's preferred contractor, plus updated estimates for other construction components, including off-busway costs and environmental mitigation.
- Land cost estimates which have been updated following extensive work in 2009 by local authority surveyors.
- A revised optimism bias premium of 3%.
- Revised estimates of on-going busway maintenance costs.

5.5.4 All other appraisal parameters have remained unchanged; the move to Full Approval being limited to the change in assumed busway operating plan and construction costs, noting however, that the revised service plan does increase busway operating costs (but with no changes to underlying unit operating costs).

5.5.5 The results of the economic appraisal for the Busway Most Likely Scenario are presented in the remainder of this section. The results of a series of simple sensitivity tests are detailed in Section 5.6. Other sensitivity tests have not been rerun using the revised scheme costs and benefits, but are reported in detail in the Conditional Approval business case.

Table 5.1 Economic Appraisal Assumptions Register

Do Minimum Service/Scheme Assumptions				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Bus Service Pattern	Small enhancement over Conditional Approval MSBC 'enhanced indicative service plan'			
Other Schemes Implemented	East Luton Corridor Highway Scheme, 20mph zones			Sensitivity Test reported in Conditional Approval MSBC
Underlying Context/Growth				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Highway Forecasts 2012-2022	TEMPRO controlled matrix plus seeding of 75% of potential trips associated with additional developments (TRICS database derived). Airport related employee trip growth in line with current Airport usage and moderate forecast of growth in Airport passengers.	TEMPRO controlled matrix plus seeding of 50% of potential trips associated with additional developments (TRICS database derived). Airport related employee trip growth in line with current Airport usage and modest forecast of growth in Airport passengers.	TEMPRO controlled matrix plus seeding of 100% of potential trips associated with additional developments (TRICS database derived). Airport related employee trip growth in line with current Airport usage and higher than Most Likely forecast of growth in Airport passengers that is in keeping with realised growth in recent years.	n/a
Public Transport Forecasts 2012-22	As above	As above	As above	n/a
PT and Highway Forecasts 2022-71	As reflected in TUBA defaults (TEMPRO)			n/a
Do Something Scheme Type				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Vehicle Type	High Quality Bus Based Transit Vehicle - single deck with "tram-like" styling and kerb guidance equipped.			n/a
Infrastructure	10km 2-way segregated busway route of which approximately 8km will be guideway, the remainder being unguided. Guideway section utilising disused railway alignment with access/egress points provided to enable feed onto busway from a variety of areas within the conurbation. High quality stops provided on route featuring real time information and off-vehicle ticketing. Improvements to circa 265 associated bus stops on highway network.			n/a
Service Plan	Enhanced Service Plan compared to Conditional Approval business case reflecting discussions with Operators and need to secure a commercially sustainable/affordable performance on the network overall			Sensitivity Test reported in Conditional Approval MSBC
Forecasting Parameters				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
AM level of CA demand calibrated on the busway corridors (observed 243)	AM 243 in line with 2002 audit calibration			n/a
IP Level of CA demand calibrated on the Busway corridors (observed 159)	IP 159 as per audited calibration			n/a
Car available Mode Constant	3.6 minutes implied busway advantage over conventional bus versus car			Most Likely Scenario sensitivity to exclusion of Mode Constant for Busway
Non-car available Mode Constant	0 minutes			n/a
Generated demand	10% inter-peak traffic			n/a
Highway induced traffic	10%			n/a
Work/non work user split	As per TUBA defaults. Busway treated as PSV with 0.8%/99.2% split.			n/a
Cost & Revenues (in 2002 prices unless otherwise stated)				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Construction Cost inc Risk	£52.99M (undiscounted 2002 resource prices to scheme opening)			Most Likely sensitivity to increase in combined implementation costs required to generate NPV=0
Land & Property Costs inc Risk	£18.37M (undiscounted 2002 resource prices to scheme opening and compensation costs to 2020)			
Optimism Bias	3%			Most Likely Sensitivity to 11% Optimism Bias
Busway Service vehicle unit cost	£214k (based on £250k @ 2009 prices)			n/a
Conventional bus unit cost	£129k (based on £150k @ 2009 prices)			n/a
Vehicle replacement cycle	10 years for Busway Vehicles; 8 years for Conventional Bus Vehicles			n/a
Vehicle residual values	Straight-line depreciation over 15 years for conventional buses and 20 years for Busway vehicles			n/a
Vehicle operating costs	Calculated as per WebTAG			n/a
Driver's wages	£8.14 per hour plus 5% overhead allowance for training			n/a
Driver's wage growth	1% per annum above RPI			n/a
PSV non-staff operating cost growth	RPI @ 2.5%			n/a
Conventional bus fares	2009 fares table adjusted to 2002 and applied as half returns to account for impact of seasons etc. on yield per trip			n/a
Busway service fares	As per conventional bus for equivalent journey			Sensitivity Test reported in Conditional Approval MSBC
Fares growth	RPI @ 2.5%			n/a
Benefit Calculation Parameters				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Value of Time	As per TUBA defaults.			n/a
Value of Time growth	As per TUBA defaults			n/a
Work/non-work user split	As per TUBA defaults			n/a
Accident rates	As per DMRB Vol. 13			n/a
Highway induced traffic	10%			n/a
Appraisal Parameters				
Assumption	**Most Likely**	**Pessimistic**	**Optimistic**	**Associated Sensitivity Tests**
Discount Rate	As per Green Book: 3.5% for years 2002 to 2042 - construction period plus years 1 to 30 of operation. 3% for years 2043 to 2071 - years 31 to 60 of operation.			n/a
Annualisation Factors	CA: 1,250 (AM peak), 1000 (inter-peak); CNA: 2650 (AM peak), 2,800 (inter-peak)			n/a
Base Year	2002			n/a
Appraisal Period	2002 to 2071 encompassing 2010-2012 implementation period and 2012 to 2071 (60 year) operating period.			n/a
Price/earnings Indices Used	RPI @ 2.5%, Construction cost estimates from tender prices are expressed in cashflow terms and include inflation. Land cost and other inflations assumed to be RPI plus 1.0% real. RPI inflation assumed for long-term renewals.			n/a

Adjustment to 2002 Price Base

5.5.6 A requirement of economic/financial appraisal of major schemes is that scheme costs be presented using a common 2002 price base. Consequently, adjustments have been made to cost estimates set out in Chapter 3 and unless specifically noted costs in this chapter should be assumed to be at 2002 prices unless stated otherwise.

Most Likely Scenario Economic Appraisal Results and TEE tables

Table 5.2 below presents the appraisal Present Values generated for each of the economic appraisal components.

Table 5.2 Most Likely Scenario Economic Appraisal Present Values (£M)

Discounted at Market Prices, 2002 PV £m		
Heading	**Appraisal Component**	**Total**
Costs Incurred	Development & Procurement	0.00
	Land Acquisition and Property Related Costs	-15.28
	Construction	-47.34
	Infrastructure renewal costs	-8.51
	Infrastructure maintenance costs	-9.57
	New & replacement Busway vehicle capex	-16.15
	Busway vehicle op costs	-41.91
	Infrastructure op costs	0.00
	Change in bus op costs	22.64
Costs Avoided	Replaced Busway vehicles residual value	5.41
	Replaced value of vehicles substituted by Busway	0.90
	Replacing vehicles subs by Busway avoided	6.32
	Residual value of replaced vehicles no longer realised	-2.15
Revenues	Busway revenue	111.49
	Bus revenue	-96.06
	Indirect taxation	-1.58
User Impacts	Travel time saving PT	72.11
	Fuel VoC saving	3.66
	Non-fuel VoC saving	3.12
	Accident cost savings	0.26
Non-user Impacts	Car travel time savings	80.87
	Accident cost savings	0.17
Contributions	Developer	3.47

Present Values and Associated Cashflows

5.5.7 Table 5.3 overleaf presents the Most Likely Scenario undiscounted and discounted cashflows from which the PV values.

Table 5.3 Busway Most Likely Undiscounted and Discounted Cashflows

Undiscounted, 2002 £m

Cost headings	Cost component	Total	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Costs Incurred	Development & Procurement	0.00																													
	Land Acquisition and Property Related Costs	-18.37			-6.33	-3.62	-0.90		-0.15	-1.18	-2.09	-2.11	-1.52	-0.31	-0.16																	
	Construction	-52.99			-14.80	-34.09	-4.11																								
	Infrastructure renewal costs	-26.85															-2.47					-3.43					-2.87				
	Infrastructure maintenance costs	-25.59					-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41
	New & replacement Busway vehicle capex	-37.26					-6.21										-6.21										-6.21				
	Busway vehicle op costs	-115.54					-1.28	-1.71	-1.72	-1.73	-1.74	-1.75	-1.76	-1.77	-1.78	-1.79	-1.80	-1.81	-1.82	-1.83	-1.85	-1.86	-1.87	-1.88	-1.89	-1.90	-1.91	-1.93	-1.94	-1.95	-1.96
	Infrastructure op costs	0.00																													
	Change in bus op costs	62.48					0.69	0.92	0.93	0.93	0.94	0.95	0.95	0.96	0.96	0.97	0.97	0.98	0.98	0.99	1.00	1.00	1.01	1.02	1.02	1.03	1.03	1.04	1.05	1.05	1.06
Costs Avoided	Replaced Busway vehicles residual value	15.53															3.11										3.11				
	Replaced value of vehicles substituted by Busway	1.05					1.05																								
	Replacing vehicles subs by Busway avoided	16.83					0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
	Residual value of replaced vehicles no longer realised	-6.81													-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
Revenues	Busway revenue	0.00																													
	Bus revenue	0.00																													
	Indirect taxation	0.00																													
User Impacts	Travel time saving PT	0.00																													
	Fuel VoC saving	0.00																													
	Non-fuel VoC saving	0.00																													
	Accident cost savings	0.72					0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Non-user Impacts	Car travel time savings	0.00																													
	Accident cost savings	0.46					0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Contributions	Developer	3.78			3.78																										

Undiscounted at Market Prices, 2002 £m

Cost headings	Cost component	Total	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Costs Incurred	Development & Procurement	0.00																													
	Land Acquisition and Property Related Costs	-22.21			-7.65	-4.37	-1.09		-0.18	-1.43	-2.53	-2.55	-1.84	-0.37	-0.19																	
	Construction	-64.07			-17.89	-41.21	-4.97																								
	Infrastructure renewal costs	-32.46															-2.99					-4.15					-3.46				
	Infrastructure maintenance costs	-30.94					-0.49	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
	New & replacement Busway vehicle capex	-45.05					-7.51										-7.51										-7.51				
	Busway vehicle op costs	-139.69					-1.54	-2.07	-2.08	-2.09	-2.11	-2.12	-2.13	-2.14	-2.15	-2.17	-2.18	-2.19	-2.21	-2.22	-2.23	-2.24	-2.26	-2.27	-2.29	-2.30	-2.31	-2.33	-2.34	-2.36	-2.37
	Infrastructure op costs	0.00																													
	Change in bus op costs	75.53					0.83	1.12	1.12	1.13	1.14	1.14	1.15	1.16	1.16	1.17	1.18	1.18	1.19	1.20	1.21	1.21	1.22	1.23	1.24	1.24	1.25	1.26	1.27	1.27	1.28
Costs Avoided	Replaced Busway vehicles residual value	18.77															3.75										3.75				
	Replaced value of vehicles substituted by Busway	1.27					1.27																								
	Replacing vehicles subs by Busway avoided	20.35					0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
	Residual value of replaced vehicles no longer realised	-8.23													-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Revenues	Busway revenue	374.04				0.00	2.79	3.81	5.53	5.62	5.70	5.79	5.87	5.96	6.05	6.14	6.14	6.15	6.15	6.16	6.16	6.17	6.17	6.18	6.18	6.19	6.19	6.23	6.27	6.30	6.34
	Bus revenue	-321.67				0.00	-2.45	-3.35	-4.84	-4.90	-4.96	-5.03	-5.08	-5.15	-5.21	-5.27	-5.27	-5.28	-5.28	-5.29	-5.29	-5.29	-5.30	-5.31	-5.31	-5.31	-5.32	-5.35	-5.38	-5.41	-5.44
	Indirect taxation	-5.53				0.00	-0.01	-0.03	-0.05	-0.06	-0.06	-0.07	-0.07	-0.08	-0.09	-0.10	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.10	-0.09	-0.10	-0.09	-0.09	-0.10	-0.10	-0.10
User Impacts	Travel time saving PT	272.73				0.00	1.37	1.85	2.71	2.79	2.87	2.95	3.03	3.11	3.19	3.28	3.32	3.37	3.41	3.45	3.50	3.55	3.59	3.64	3.69	3.74	3.81	3.88	3.95	4.03	4.11
	Fuel VoC saving	12.77				0.00	0.05	0.08	0.12	0.14	0.15	0.16	0.17	0.19	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22
	Non-fuel VoC saving	10.81				0.00	0.05	0.07	0.12	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19
	Accident cost savings	0.87				0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Non-user Impacts	Car travel time savings	321.32				0.00	0.65	1.06	1.77	2.04	2.31	2.59	2.87	3.17	3.48	3.79	3.85	3.90	3.96	4.02	4.08	4.14	4.20	4.26	4.32	4.39	4.47	4.56	4.66	4.76	4.86
	Accident cost savings	0.55				0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Contributions	Developer	4.57			4.57																										

Discounted at Market Prices, 2002 PV £m

Heading	Appraisal Component	Total	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Costs Incurred	Development & Procurement	0.00																													
	Land Acquisition and Property Related Costs	-15.28			-5.81	-3.21	-0.77		-0.12	-0.91	-1.56	-1.52	-1.06	-0.21	-0.10																	
	Construction	-47.34			-13.58	-30.24	-3.52																								
	Infrastructure renewal costs	-8.51															-1.50					-1.76					-1.23				
	Infrastructure maintenance costs	-9.57					-0.35	-0.34	-0.33	-0.32	-0.31	-0.30	-0.29	-0.28	-0.27	-0.34	-0.25	-0.24	-0.23	-0.23	-0.22	-0.21	-0.20	-0.20	-0.25	-0.18	-0.18	-0.17	-0.17	-0.16	-0.16
	New & replacement Busway vehicle capex	-16.15					-5.32										-3.77										-2.68				
	Busway vehicle op costs	-41.91					-1.09	-1.42	-1.38	-1.34	-1.30	-1.26	-1.23	-1.19	-1.16	-1.13	-1.10	-1.06	-1.03	-1.01	-0.98	-0.95	-0.92	-0.90	-0.87	-0.85	-0.82	-0.80	-0.78	-0.76	-0.74
	Infrastructure op costs	0.00																													
	Change in bus op costs	22.64					0.59	0.76	0.74	0.72	0.70	0.68	0.66	0.64	0.63	0.61	0.59	0.57	0.56	0.54	0.53	0.51	0.50	0.48	0.47	0.46	0.45	0.43	0.42	0.41	0.40
Costs Avoided	Replaced Busway vehicles residual value	5.41															1.89										1.34				
	Replaced value of vehicles substituted by Busway	0.90					0.90																								
	Replacing vehicles subs by Busway avoided	6.32					0.24	0.23	0.22	0.22	0.21	0.20	0.20	0.19	0.18	0.18	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.11	0.11	0.11
	Residual value of replaced vehicles no longer realised	-2.15													-0.09	-0.08	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	-0.06	-0.06	-0.06	-0.06	-0.06	-0.05	-0.05	-0.05	-0.05
Revenues	Busway revenue	111.49				0.00	1.98	2.61	3.66	3.59	3.52	3.46	3.39	3.32	3.26	3.19	3.09	2.98	2.89	2.79	2.70	2.61	2.52	2.44	2.36	2.28	2.21	2.14	2.08	2.03	1.97
	Bus revenue	-96.06				0.00	-1.74	-2.29	-3.20	-3.13	-3.07	-3.00	-2.93	-2.87	-2.80	-2.74	-2.65	-2.56	-2.48	-2.40	-2.32	-2.24	-2.17	-2.10	-2.03	-1.96	-1.90	-1.84	-1.79	-1.74	-1.69
	Indirect taxation	-1.58				0.00	-0.01	-0.02	-0.03	-0.04	-0.04	-0.04	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03
User Impacts	Travel time saving PT	72.11				0.00	0.97	1.27	1.80	1.78	1.77	1.76	1.75	1.73	1.72	1.71	1.67	1.63	1.60	1.57	1.53	1.50	1.47	1.44	1.41	1.38	1.36	1.34	1.32	1.30	1.28
	Fuel VoC saving	3.66				0.00	0.03	0.05	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07
	Non-fuel VoC saving	3.12				0.00	0.03	0.05	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06
	Accident cost savings	0.26				0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Non-user Impacts	Car travel time savings	80.87				0.00	0.46	0.73	1.17	1.30	1.42	1.54	1.66	1.77	1.87	1.97	1.93	1.90	1.86	1.82	1.79	1.75	1.72	1.68	1.65	1.62	1.59	1.57	1.55	1.53	1.51
	Accident cost savings	0.17				0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contributions	Developer	3.47			3.47																										

Undiscounted, 2002 £m

Cost headings	Cost component	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Costs Incurred	Development & Procurement																																			
	Land Acquisition and Property Related Costs																																			
	Construction																																			
	Infrastructure renewal costs					-1.70	-4.20										-2.87					-3.43					-2.47									-3.40
	Infrastructure maintenance costs	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.54	-0.41	-0.41	-0.41	-0.41	-0.41
	New & replacement Busway vehicle capex						-6.21										-6.21										-6.21									
	Busway vehicle op costs	-1.97	-1.99	-2.00	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01
	Infrastructure op costs																																			
	Change in bus op costs	1.07	1.07	1.08	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Costs Avoided	Replaced Busway vehicles residual value						3.11										3.11										3.11									
	Replaced value of vehicles substituted by Busway																																			
	Replacing vehicles subs by Busway avoided	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
	Residual value of replaced vehicles no longer realised	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
Revenues	Busway revenue																																			
	Bus revenue																																			
	Indirect taxation																																			
User Impacts	Travel time saving PT																																			
	Fuel VoC saving																																			
	Non-fuel VoC saving																																			
	Accident cost savings	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Non-user Impacts	Car travel time savings																																			
	Accident cost savings	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Contributions	Developer																																			

Undiscounted at Market Prices, 2002 £m

Cost headings	Cost component	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Costs Incurred	Development & Procurement																																			
	Land Acquisition and Property Related Costs																																			
	Construction																																			
	Infrastructure renewal costs					-2.06	-5.08										-3.46					-4.15					-2.99									-4.11
	Infrastructure maintenance costs	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.66	-0.50	-0.50	-0.50	-0.50	-0.50
	New & replacement Busway vehicle capex						-7.51										-7.51										-7.51									
	Busway vehicle op costs	-2.39	-2.40	-2.42	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43
	Infrastructure op costs																																			
	Change in bus op costs	1.29	1.30	1.31	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
Costs Avoided	Replaced Busway vehicles residual value						3.75										3.75										3.75									
	Replaced value of vehicles substituted by Busway																																			
	Replacing vehicles subs by Busway avoided	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
	Residual value of replaced vehicles no longer realised	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Revenues	Busway revenue	6.37	6.41	6.45	6.48	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.52	6.53
	Bus revenue	-5.47	-5.50	-5.54	-5.56	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.59	-5.60	-5.60	-5.60	-5.60	-5.60	-5.60	-5.59	-5.60	-5.60	-5.60	-5.60	-5.59	-5.59	-5.60	-5.59	-5.60	-5.60	-5.60	-5.59	-5.60
	Indirect taxation	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.11	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.09
User Impacts	Travel time saving PT	4.19	4.27	4.36	4.44	4.53	4.59	4.66	4.72	4.79	4.85	4.92	4.99	5.06	5.14	5.21	5.27	5.34	5.41	5.48	5.55	5.62	5.69	5.76	5.84	5.91	6.00	6.08	6.17	6.25	6.34	6.43	6.52	6.62	6.70	6.81
	Fuel VoC saving	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.23	0.23	0.23	0.24	0.23	0.23
	Non-fuel VoC saving	0.19	0.19	0.19	0.19	0.20	0.19	0.20	0.19	0.19	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.20	0.19	0.19	0.19	0.20	0.19	0.19	0.20	0.19	0.19
	Accident cost savings	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Non-user Impacts	Car travel time savings	4.97	5.08	5.19	5.31	5.42	5.51	5.59	5.68	5.77	5.86	5.95	6.04	6.14	6.23	6.33	6.42	6.51	6.60	6.70	6.80	6.90	6.99	7.09	7.19	7.29	7.41	7.53	7.65	7.77	7.89	8.01	8.14	8.27	8.40	8.55
	Accident cost savings	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Contributions	Developer																																			

Discounted at Market Prices, 2002 PV £m

Cost headings	Cost component	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071
Costs Incurred	Development & Procurement																																			
	Land Acquisition and Property Related Costs																																			
	Construction																																			
	Infrastructure renewal costs					-0.54	-1.29										-0.65					-0.68					-0.42									-0.44
	Infrastructure maintenance costs	-0.15	-0.14	-0.18	-0.14	-0.13	-0.13	-0.12	-0.12	-0.12	-0.11	-0.11	-0.14	-0.10	-0.10	-0.10	-0.09	-0.09	-0.09	-0.09	-0.08	-0.11	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	-0.07	-0.06	-0.08	-0.06	-0.06	-0.06	-0.06	-0.05
	New & replacement Busway vehicle capex						-1.91										-1.42										-1.06									
	Busway vehicle op costs	-0.72	-0.70	-0.68	-0.66	-0.64	-0.62	-0.60	-0.58	-0.56	-0.55	-0.53	-0.52	-0.50	-0.49	-0.47	-0.46	-0.45	-0.43	-0.42	-0.41	-0.40	-0.38	-0.37	-0.36	-0.35	-0.34	-0.33	-0.32	-0.31	-0.30	-0.29	-0.29	-0.28	-0.27	-0.26
	Infrastructure op costs																																			
	Change in bus op costs	0.39	0.38	0.37	0.36	0.34	0.33	0.32	0.31	0.31	0.30	0.29	0.28	0.27	0.26	0.26	0.25	0.24	0.23	0.23	0.22	0.21	0.21	0.20	0.20	0.19	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14
Costs Avoided	Replaced Busway vehicles residual value						0.95										0.71										0.53									
	Replaced value of vehicles substituted by Busway																																			
	Replacing vehicles subs by Busway avoided	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	Residual value of replaced vehicles no longer realised	-0.05	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Revenues	Busway revenue	1.91	1.86	1.81	1.75	1.70	1.65	1.61	1.56	1.51	1.47	1.43	1.39	1.34	1.31	1.27	1.23	1.19	1.16	1.13	1.09	1.06	1.03	1.00	0.97	0.94	0.92	0.89	0.86	0.84	0.81	0.79	0.77	0.75	0.72	0.70
	Bus revenue	-1.64	-1.59	-1.55	-1.51	-1.46	-1.42	-1.38	-1.34	-1.30	-1.26	-1.23	-1.19	-1.16	-1.12	-1.09	-1.06	-1.03	-1.00	-0.97	-0.94	-0.91	-0.88	-0.86	-0.83	-0.81	-0.79	-0.76	-0.74	-0.72	-0.70	-0.68	-0.66	-0.64	-0.62	-0.60
	Indirect taxation	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
User Impacts	Travel time saving PT	1.26	1.24	1.22	1.20	1.18	1.17	1.15	1.13	1.11	1.09	1.08	1.06	1.04	1.03	1.01	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.88	0.87	0.86	0.84	0.83	0.82	0.80	0.79	0.78	0.77	0.76	0.74	0.73
	Fuel VoC saving	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
	Non-fuel VoC saving	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	Accident cost savings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-user Impacts	Car travel time savings	1.49	1.47	1.45	1.44	1.42	1.40	1.38	1.36	1.34	1.32	1.30	1.28	1.27	1.25	1.23	1.21	1.19	1.18	1.16	1.14	1.12	1.11	1.09	1.07	1.06	1.04	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.93	0.92
	Accident cost savings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contributions	Developer																																			

Most Likely Scenario TEE Table

5.5.8 Table 5.4 presents the TEE table for Luton Dunstable Busway under the Most Likely scenario.

Table 5.4 Luton Dunstable Busway Most Likely Scenario TEE Table (£M)

Economic Efficiency of the Transport System (TEE)

	Total all modes	Road	Public Transport	
User benefits - Consumers				
Travel time	99.3	35.4	63.9	
Vehicle Operating Costs	4.7	4.7	0.0	
User charges	0.0	0.0	0.0	
During construction & maintenance	0.0	0.0	0.0	
NET IMPACTS	**104.1**	**40.2**	**63.9**	
User benefits - Business				
Travel time	53.6	45.4	8.2	
Vehicle Operating Costs	2.1	2.1	0.0	
User charges	0.0	0.0	0.0	
During construction & maintenance	0.0	0.0	0.0	
NET IMPACTS	**55.7**	**47.5**	**8.2**	
Private sector provider impacts			**Bus**	**Busway**
Revenues	15.4	0	-96.1	111.5
Operating Costs	-19.3	0	22.6	-41.9
Investment (Capital) costs	-5.7	0	5.1	-10.7
Grant/ Subsidy	3.8	0	3.8	0.0
NET IMPACTS	**-5.7**	**0.0**	**-64.5**	**58.9**
Other business impacts				
Private developer contribution	-3.5	0	0	-3.5
NET BUSINESS IMPACT	**46.6**			
TOTAL PVB	**150.6**			

Local Government Funding	**Total all modes**	**Road**	**Bus**	**Busway**
Revenues	0.0	0	0	0
Operating Costs	-13.4	0	-3.8	-9.6
Investment Costs	-71.1	0	0	-71.1
Developer and other contributions	3.5	0	0	3.5
Grant/ Subsidy	67.7	0	0	67.7
NET IMPACTS	**-13.4**	**0**	**-3.8**	**-9.6**
Central Government Funding				
Revenues	0.0	0	0	0.0
Operating Costs	0.0	0	0	0.0
Investment Costs	0.0	0	0	0.0
Developer and other contributions	0.0	0	0	0.0
Grant/ Subsidy	-67.7	0	0	-67.7
Indirect tax revenues	-1.6	-4.5	-16.2	19.1
NET IMPACTS	**-69.2**	**-4.5**	**-16.2**	**-48.5**
TOTAL PVC	**-82.6**			
Accidents	0.4			
Consumer users	104.1			
Business users and providers	46.6			
Present value of benefits (PVB)	**151.1**			
Public accounts	-82.6			
Present value of costs (PVC)	**-82.6**			

Net Present Value (NPV)	**68.4**
Benefit to Cost Ratio (BCR)	**1.83**

5.5.9 The Most Likely Luton Dunstable Busway TEE presents a sound economic case for the scheme:

- An overall BCR of over 1.8:1 and the scheme delivers a significant NPV a little under £70M indicating a scheme representing good value for money;
- Benefits derived from PT users account for 45% of total user time benefits.
- The significant highway user benefits reflect the impact the introduction of the busway is having on a highway network where journey times have deteriorated as a result of underlying, development related and airport growth.
- Busway services generate a healthy operating surplus and net financial effect accounting for investment in new vehicles.
- The operating impact on the combined conventional and busway network is broadly neutral over the 60 year appraisal period, assuming optimisation of either networks over the period. A small revenue support allowance for the network is included in the appraisal as a cost to the local authority.

5.5.10 The appraisal is broadly similar to that of the Enhanced Indicative Service Plan reported in section 12 of the Major Scheme Business Case Update for Conditional Approval submission; principally as the service plan has been enhanced to be similar the Conditional Approval sensitivity and tender price costs, with the reduced optimism bias premium, expressed as cashflow values in discounted 2002 prices are broadly similar to the Conditional Approval costs.

Table 5.5 Appraisal Summary Table - Most Likely Scenario

Description: **Luton Dunstable Busway** **13 km bus rapid transit scheme serving the Luton, Dunstable and Houghton Regis conurbation. Core segregated network encompassing route south of Houghton Regis to Dunstable and Luton town centres and London Luton Airport. Network of high quality bus services using the core infrastructure and serving Houghton Regis, Dunstable, Parkside and Lewsey Farm. Scope to further develop network with branches into the Milton Keynes/South Midlands growth area to the north and to the Junction 10A development site.**		**Problems/Opportunities:** • **Heavy inbound commuting, mainly by car leading to congestion on key corridors and displacement of traffic onto unsuitable roads** • **High levels of air and noise pollution, particularly in the M1 and A5 corridors, and around London Luton Airport** • **Heavy car use for school trips leading to local congestion** • **Lack of available land for new transport infrastructure, particularly for increasing road capacity** • **Declining bus patronage with increased car ownership and use. Attractiveness of bus services hindered by journey time and reliability problems associated with sharing often congested road space with other traffic** • **Role as regional centre challenged by access problems, land shortages, economic restructuring and competition from other towns** • **Expansion of London Luton Airport increasing employment opportunities but increasing surface access pressures** • **Priority Area for Economic Regeneration (PAER) status**		**Present Value of Costs to Public Accounts: £82.6M**
OBJECTIVE	**SUB-OBJECTIVE**	**QUALITATIVE IMPACTS**	**QUANTITATIVE MEASURE**	**ASSESSMENT**
ENVIRONMENT	**Noise**	The Busway will introduce a noise source along a new corridor. The most adverse effects will be at Caddington Park properties and this is mainly due to their close proximity and poor noise insulation.	The estimated additional number of people annoyed by noise due to the scheme is 9.	**Slight Adverse**
	Air Quality	Localised reductions in particulate matter along the A505, where the majority of properties are situated though some deterioration with respect to Nitrogen Dioxide.	PM_{10}: -20 NO_2: +4.5	**Slight Beneficial**
	Greenhouse Gases	Slight beneficial impact, due to reduced road traffic resulting from mode shift.	CO2: -953 tonnes	**Slight Beneficial**
	Landscape	The busway would have a slight/moderate adverse impact in the Blows Down area near the Chilterns AONB. However, the busway also offers opportunities to significantly improve the character of some areas through which it passes.	N/A	**Neutral**
	Townscape	The scheme runs predominantly through urban settings and has the potential to enhance local character and distinctiveness.		**Slight Beneficial**
	Heritage	The former railway is of local heritage value and would be altered as a result of the Busway scheme. Other potential impacts on Heritage resources could be successfully mitigated.	N/A	**Moderate Adverse**
	Biodiversity	The key ecological impact will be the loss of the habitat along the former railway line. This habitat is of county importance, though habitat quality is declining with lack of management. It is likely that this habitat could be substituted within the mitigation areas. Although the route runs adjacent to, there will be no effects on Blows Down SSSI, apart from minor habitat loss along the footpath where chalk grassland will be subsequently re-instated.	N/A	**Slight Adverse**
	Water Environment	Appropriate prior ground investigations, good practice during construction and good design will minimise the risk of any negative impacts from the scheme.	N/A	**Neutral**
	Physical Fitness	Introduction of cycle /pathway alongside guideway may encourage walking and cycling, though the bus services may attract those who previously walked.	N/A	**Neutral**
	Journey Ambience	Benefits for a significant number of passengers in all aspects of the public transport journey including information, comfort and travel environment.	N/A	**Moderate Beneficial**
SAFETY	**Accidents**	Significant car transfer will lead to some accident savings.	Reduction of 0.24 Personal Injury Accidents per Million Vehicle Km across all road types forecast for 2021	**PVB £0.4M**
	Security	CCTV, quality lighting and passenger help points at stops.	N/A	**Moderate Beneficial**
ECONOMY	**Public Accounts**		Central Govt. PVC: £69.2M; Local Govt PVC: £13.4M	**PVC: £82.6M**
	Business Users & Providers		Users PVB: £55.7M; Provider PVB: -£5.7M; Other PVB: £-3.5M	**PVB: £46.6M**
	Consumer Users		Consumer Users PVB: £104.1M	**PVB: £104.1M**
	Reliability	Guideway ensures a high level of segregation against alternative modes utilising the highway network and allows buses to circumvent key points of delay and congestion.	N/A	**Beneficial**
	Wider Economic Impacts	Scheme will provide good connectivity and access to development sites and growth areas. Not to be viewed as "turnkey" with respect to securing development, it can be viewed as integral to achieving sustainability objectives with respect to development impacts. Provides particularly strong connectivity with London Luton Airport growth pole and offers potential for refinement / extension to serve DCLG housing growth areas, and major Napier Park, Power Court, Luton Gateway, Wigmore Employment Area and M1 Junction 10A development sites.	Up to 1512 additional jobs becoming accessible in a given ward (Dallow) Over 2111 increase in workforce accessible to employers in a given ward (Dallow).	**Beneficial**
ACCESSIBILITY	**Access to Transport System**	Currently disused railway line brought back into use resulting in a large number of non-car owning households having access to an improved public transport service within the conurbation, though increases in terms of access to a service is small reflecting relatively comprehensive base level of coverage.	18691 (76%) of all non-car owning households within the conurbation are within 400 metres of a bus service or Busway service	**Neutral**
	Option Values	Currently disused railway line brought back into use resulting in a large number of car-owning households having an improved public transport option within the conurbation, though actual increase in number for whom option index improves is small due to high base levels of accessibility.	51975 (86%) of all car owning households within the conurbation are within 400 metres of a bus service or Busway service	**Neutral**
	Severance	The Busway scheme will have a mixture of severance effects. It will introduce some severance by reintroducing vehicles on the disused railway alignment over which there is currently informal access. Formal crossing facilities will be provided and the scheme will help facilitate pedestrian access improvements elsewhere (Luton and Dunstable town centres).	N/A	**Slight Beneficial**
INTEGRATION	**Transport Interchange**	Scheme will negate the need for interchange altogether on a number of journeys from around the conurbation to key destinations and enhance bus-bus, bus-rail and bus-air interchange. Opportunities for integrated ticketing and partnering to be developed as part of the scheme.	2 busway-rail interchange locations. Direct connection with new Luton bus station. Direct link to London Luton Airport	**Moderate Beneficial**
	Land Use Policy	Aligns closely with land-use policy at National, Regional and Local levels. The Busway is clearly identified and safeguarded within the Bedfordshire Structure Plan, Luton Borough Local Plan and South Bedfordshire District Plan.	N/A	**Beneficial**
	Other Government Policies	Adheres to and promotes the aims of a full range of national transport, environmental and social policies.	N/A	**Beneficial**

5.6 Sensitivity Analysis

5.6.1 Given the stage in the process reached for the scheme, a number of key sensitivities are reported here. Other sensitivity tests, for example the impact of the Dunstable Bypass have not been rerun based on the current appraisal, but have been reported in detail in the Conditional Approval Major Scheme Business Case.

5.6.2 Table 5.6 reports on a number of key simple sensitivities:

- Implementation cost overrun required to give BCR of 1.5:1.
- Patronage fall required throughout 60 year appraisal period to reduce BCR to 1.5:1.
- Reduction in non-user benefits throughout 60 year appraisal period to reduce BCR to 1.5:1.
- Optimism bias premium of 11% (as per conditional approval) rather than 3%.
- Removal of the mode specific constant for the Busway services.
- Pessimistic and Optimistic scenarios as defined in Table 5.1.

Table 5.6 Sensitivity to Key Drivers of Scheme Net Present Value and BCRs

Sensitivity	Most Likely	Implementation cost overrun required to reduce BCR to 1.5:1	Patronage fall required to reduce BCR to 1.5:1	Non-User Benefit fall required to reduce BCR to 1.5:1	Implementation cost with 11% Optimism Bias Premium
Implementation cost overrun (%change)		29%			
Busway demand (%change)			-15%		
Non-User benefit (%change)				32%	
Consumer User benefits PV £M	**104.1**	104.1	88.7	91.9	104.1
(£M change from ML)		0.0	-15.4	-12.1	0.0
Business User benefits PV £M	**55.7**	55.7	47.5	40.8	55.7
(£M change from ML)		0.0	-8.2	-15.0	0.0
Private Sector provider inputs PV £M	**-5.7**	-5.7	-5.7	-5.7	-5.7
(£M change from ML)		0.0	0.0	0.0	0.0
Other Business Impacts PV £M	**-3.5**	-3.5	-3.5	-3.5	-3.5
(£M change from ML)		0.0	0.0	0.0	0.0
Local Govt. PV £M	**-13.4**	-13.4	-15.7	-13.4	-13.4
(£M change from ML)		0.0	-2.3	0.0	0.0
Central Govt. PV £M	**-69.2**	-87.3	-69.2	-69.2	-74.8
(£M change from ML)		-18.1	0.0	0.0	-5.5
PVB £M	**151.1**	151.1	127.4	124.0	151.1
PVC £M	**-82.6**	-100.7	-84.9	-82.6	-88.2
NPV £M	**68.4**	50.4	42.5	41.3	62.9
BCR	**1.83**	1.50	1.50	1.50	1.71

Sensitivity	Most Likely	No Mode Specific Constant	Pessimistic	Optimistic
Consumer User benefits PV £M	**104.1**	81.3	84.0	118.7
(£M change from ML)		-22.8	-20.0	14.7
Business User benefits PV £M	**55.7**	41.9	35.4	67.8
(£M change from ML)		-13.8	-20.3	12.1
Private Sector provider inputs PV £M	**-5.7**	-5.7	-5.7	-5.7
(£M change from ML)		0.0	0.0	0.0
Other Business Impacts PV £M	**-3.5**	-3.5	-3.5	-3.5
(£M change from ML)		0.0	0.0	0.0
Local Govt. PV £M	**-13.4**	-19.2	-14.4	-11.7
(£M change from ML)		-5.8	-1.0	1.7
Central Govt. PV £M	**-69.2**	-68.8	-68.4	-69.4
(£M change from ML)		0.5	0.9	-0.2
PVB £M	**151.1**	114.4	110.7	177.9
PVC £M	**-82.6**	-88.0	-82.8	-81.1
NPV £M	**68.4**	26.4	27.9	96.8
BCR	**1.83**	1.30	1.34	2.19

6 Project Governance

6.1 Project Governance Structure to date

6.1.1 This chapter outlines the Project Governance arrangements for the Luton Dunstable Busway that have been in place during the development and approval phases and also provides an outline of the new arrangements that will be implemented during late December 2009 as the project moves to the construction and delivery phase.

6.1.2 The Project Governance arrangements that have been in place during the scheme development and approval phase so far were implemented in Spring 2007 and were described in the Conditional Approval Business Case. These arrangements basically consisted of the scheme project management group supported by a Project Commercial Director reporting to the Project Leader who in turn reported to a scheme Project Board. Appendix C includes copies of the reports to and minutes of Luton's Corporate Leadership Management Team and Central Bedfordshire Council's Shadow Executive Committee, which approved the formation and composition of the Project Board for the Busway scheme.

6.1.3 The scheme is now being delivered in partnership with Central Bedfordshire Council, and a partnership agreement between the two authorities (also included in Appendix C) governs the relationship and confirms the project governance and funding arrangements. The Project Management group now includes officers from both Luton Borough Council as well as Central Bedfordshire Council. Similarly, the Project Board also includes senior (first and second tier) officers from both Councils. The résumés of key staff have therefore been updated and are included at Appendix D.

6.2 Need for change and delivery phase project plan

6.2.1 The general project governance arrangements used thus far will now be amended in order to recognise the change of emphasis of the project cycle from a "scheme development and approvals" phase to a "construction and delivery" phase. This change is needed in order to ensure robust contract and project management of both the main construction works being delivered through the tendered contract as well as the on-highway works being delivered through the existing term contracts. The arrangements will also focus on the need to ensure all other elements of the project, such as bus services and RTPI, are also pursued and delivered at such a pace as to ensure that the whole Busway scheme is delivered successfully at the right time and becomes fully operational in all its component elements both singularly and collectively.

6.2.2 The on-highway works will be delivered through the term contracts of the two Councils and accordingly contain relatively low exposure to risk of cost over-run or contractual difficulty. The tendered construction contract for the main works, on the other hand, will be delivered by way of a stand-alone Design & Build contract from the New Engineering Contract (NEC) suite of contracts. This part of the project delivery contains a relatively higher degree of exposure to risk and it is for this reason that the revised project governance arrangements need to particularly provide for a robust contract management regime to manage the contract and contractor within the NEC framework. Key elements within this new arrangement will be the need for a strong and skilful NEC Project Manager to administer the Design & Build construction contract and an effective and efficient working relationship between the NEC Project Manager, the Project Leader and the Employer (represented by the Corporate Director for Environment and Regeneration at Luton).

6.2.3 The proposed new project governance structure and arrangements are shown at Figure 6 below and will be brought into effect during December 2009. There is every expectation that the NEC Project Manager role can be filled before the end of December. Temporary alternative arrangements are, however, already in place should this not happen by then. The contractual, supervisory and legal support framework needed by the NEC Project Manager, as shown in the governance diagram, is already in place having been procured a few months ago through a competitive procurement exercise.

6.2.4 Although a full and comprehensive Construction phase delivery plan is being finalised at the moment, the key roles are described in the following paragraphs.

6.3 Brief description of governance arrangements from now on

6.3.1 The proposed governance structure for the project effective from December 2009 is shown at Figure 6.1 at the end of this chapter. A brief description of the roles and responsibilities is

given in the following paragraphs. A Construction Phase Delivery Plan is being finalised and will be put in place in January 2010.

6.4 Project Board

6.4.1 The Project Board will continue to consist of the Directors of Environment and Heads of Finance for both Councils and be chaired by Colin Chick, the Corporate Director for Environment and Regeneration at Luton Borough Council. The Project Board carries the highest level of operational responsibility from an officer perspective for the project and retains overall authority, control and responsibility for progress, amendment and closure of the project. Other senior officers or advisers are temporarily co-opted to the Board as required. For example over the last 18 months the Heads of Corporate Procurement for both Councils have been co-opted onto the Board to advise them on procurement issues relating to the development and award of the main construction contract.

6.5 Project Client and Chief Executive & Members

6.5.1 The contractual relationship with the Contractor exists with the Employer that awards the construction contract, which in this case will be Luton Borough Council. The highest corporate manifestation of the Employer is the Council of the Borough of Luton in conjunction with the Chief Executive. Day to day functionality needs to be provided by a high level representative or Project Client. This role will be filled by Luton Borough Council's Director of Environment & Regeneration, Colin Chick.

6.6 Contractor

6.6.1 The Contractor's role is to design and construct the works described in the contractual works information. The Employer and employer's side delivery team will need to recognise the time and cost pressures that the contractor will be under in relation to delivering the works in accordance with the contract as well as shareholders' expectations of meeting certain levels of profitability.

6.7 Project Leader

6.7.1 This role provides the overall strategy and leadership for ensuring successful delivery of the whole project throughout all of its project lifecycles. This role will ensure that the various aspects of project delivery are brought together at the right pace and time to enable the busway scheme to come into successful operation. This role is also the principal liaison with the Employer's representative, the Project Client. This role has thus far been provided by Mehmood Khan, Luton Borough Council's Head of Engineering & Transportation.

6.8 NEC Project Manager (NEC-PM)

6.8.1 This is a critical role in relation to the construction phase of the main works and is the contractual counterpart to the Contractor. The role is very demanding both in terms of technical ability as well as physically and mental endurance. Although the role itself is provided by one individual, its size and breadth is such that a supporting team of deputies, assistants and technical & legal advisors will be essential to ensure that the role is performed efficiently and that the Employer and public purse are protected from any unwarranted contractual assault. A Job Description and Person Specification has been developed for this role and the position is in the process of being filled.

6.8.2 The NEC-PM and the construction phase team will be based on site for the duration of the works along with relevant members of the general project management team. The NEC-PM may be invited to report to the Project Board as appropriate.

6.9 Contract Management, Quantity Surveying (QS) and Legal Support

6.9.1 As described in the preceding paragraph, because of the demands that will be placed on the NEC-PM, it is essential that a strong, high quality supporting resource is available to ensure correct and well informed decisions are taken during the administration of the contract. This area of support expressly addresses the contractual aspects of managing the construction phase of the main works. Contractual relationships at this level can be extraordinarily complicated and influenced by legal interpretation. It is for this reason, and as a consequence of past experience, that it is deemed essential for an appropriate reliable legal support resource to also be available to the NEC-PM. This particular resource is, however, likely to be procured directly by the Project Leader and will accordingly report directly to that role with a "dashed-line" report to the NEC-PM as legal perspectives and potential consequences of significant matters will also be important to the Project Client and Employer. Atkins have been procured to provide Contract management and QS support. Mills & Reeve have been providing legal support to the project during the procurement stage and are expected to provide legal support during the construction stage.

6.10 Project Supervisor and Design Assessment Support

6.10.1 Although the construction phase will be delivered by a "design & build" arrangement, it is essential that the NEC-PM is fully supported by a robust framework of "eyes and ears" to ensure satisfactory delivery of the contractors commitments as well as protecting the NEC-PM's (and consequently the Employer's) position in relation to any differences or disputes that may arise with the Contractor. Similarly, since the delivery arrangements are "design & build", it is essential that the NEC-PM is supported by a resource that is able to critically assess design or design-change proposals put forward by the Contractor. Atkins will provide all the resources needed for these roles.

6.11 Project Commercial Director

6.11.1 This role is essential to ensure that the overall LDB scheme becomes an operational and commercial success on completion. The role will be responsible for ensuring that aside from the main works, all the other works, issues and interfaces are co-ordinated and brought on-stream as effectively and efficiently as possible. The role will also ensure that all planning & property related legal and commercial aspects are successfully concluded and delivered and the various other streams of work essential to the wider project are fully identified and delivered at the time and pace necessary. These other streams of work include the off-Busway works, Real Time Passenger Information (RTPI) System, Marketing & Promotion and Property & Planning issues. The role will also ensure successful linkages with other major transport projects such as the Luton Town Centre Transport Scheme and the Luton Station improvements. Phil Cunningham is the current role holder and is expected to continue in this role.

6.12 The Project Management Group and Project Sub-groups

6.12.1 This is largely the project management group that has existed since the out-set of the project and includes people such as the Service Manager from Luton Borough Council (Keith Dove), the scheme Project Manager (Antony Aldridge), equivalent colleagues from the partner authority (e.g. Dave Buck) and relevant representatives from other supporting services and stakeholders. This team has developed and managed the project so far and has greatest familiarity with the various components of the wider project and what needs to be done to bring those components together to achieve a successful conclusion.

6.12.2 There are a number of sub-groups which are tasked with carrying out specific areas of work. The objectives and composition of each sub-group, together with brief résumés for key

personnel were provided with the Conditional Approval Business Case. All of these sub-groups have been actively involved in key aspects of the delivery of the Busway scheme so far.

6.12.3 The Project Management Group and sub-groups will continue their relationship with other local authorities that have guided busway schemes operational or under construction to discuss specific issues. The project team have maintained a particularly close contact with the Cambridgeshire Guided Busway team with regard to procurement, land and compensation matters, and the development of service operations. That close contact will now be extended to learning lessons to be applied during the construction phase of the main works.

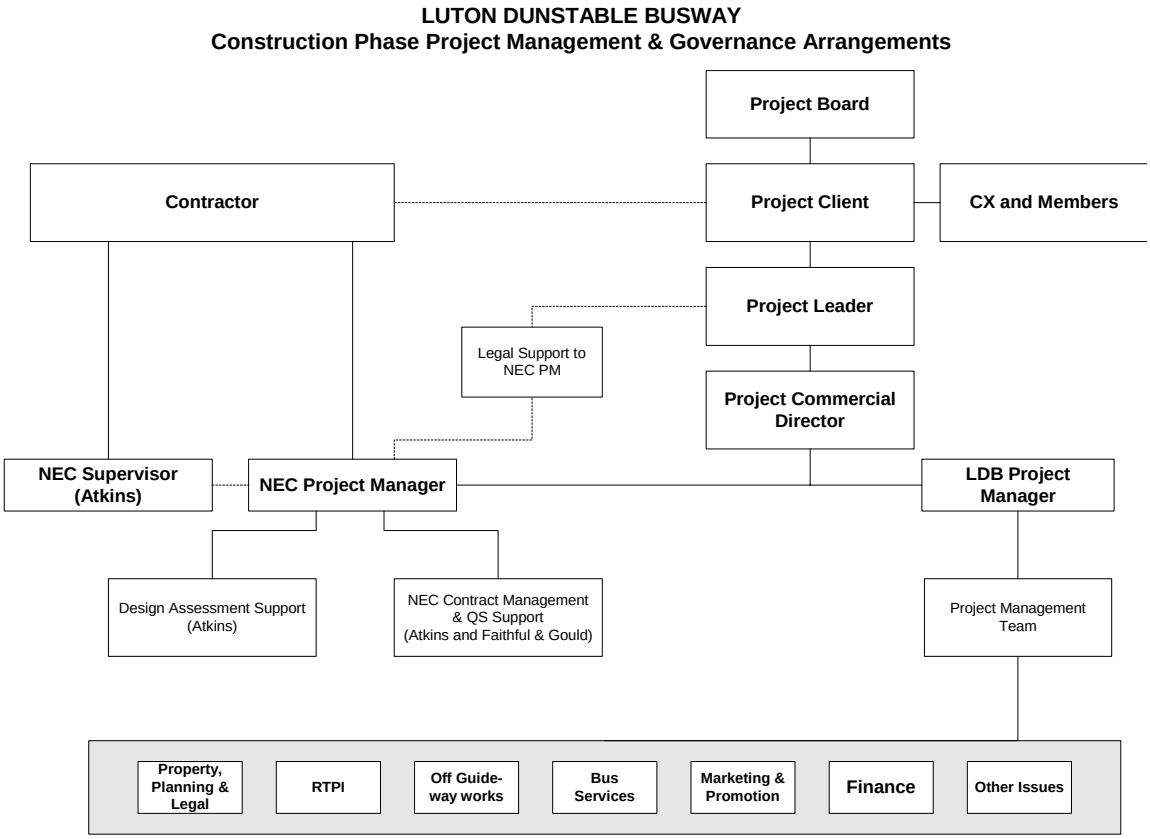
6.13 Delivery Phase Project Delivery Plan

6.13.1 A delivery phase project delivery plan is currently being drawn up and will contain further details of the various roles described above together with how the various components of the wider Busway scheme are intended to be managed and delivered for successful operational opening.

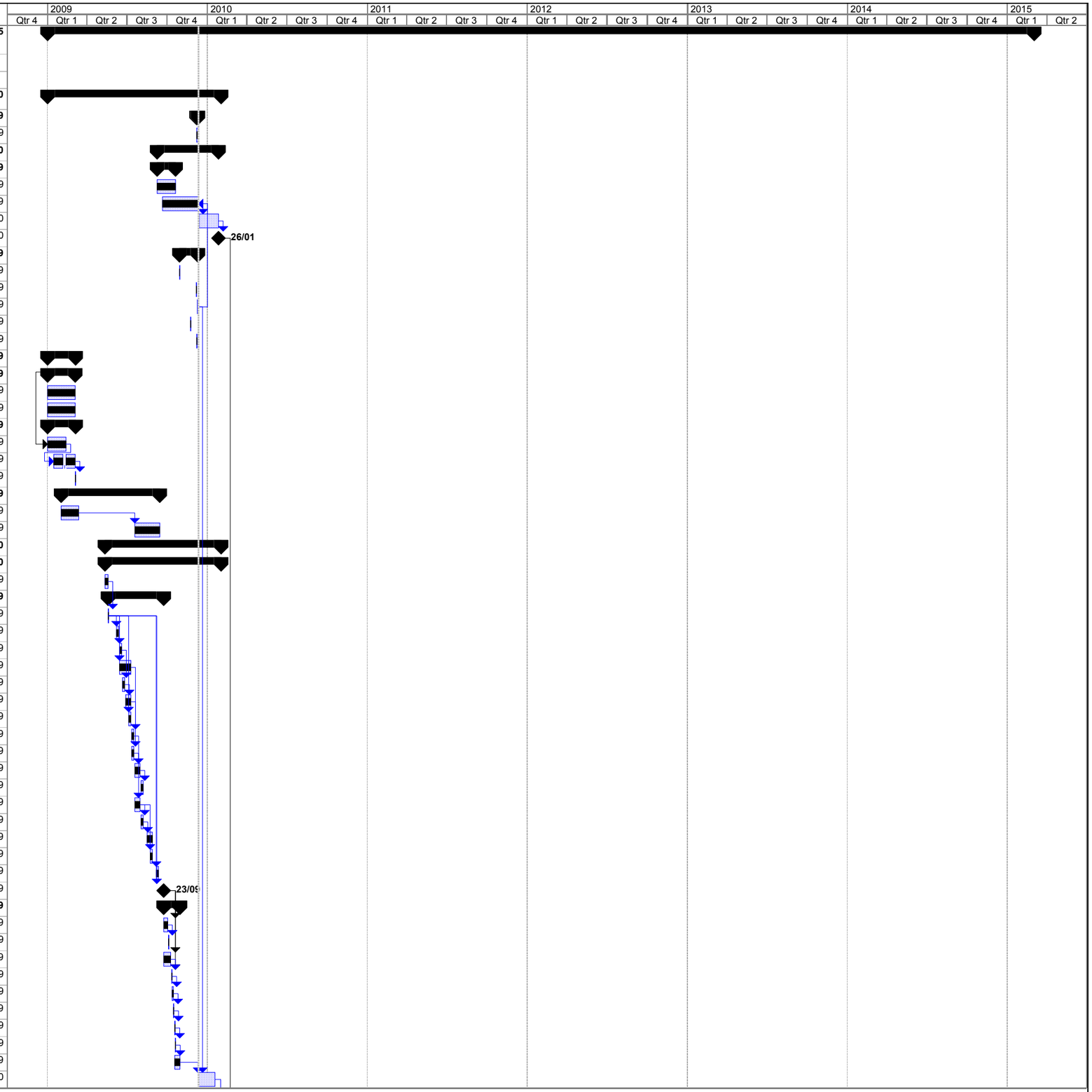
6.14 Risk assessment

6.14.1 The scheme risk register is contained at Appendix E. This comprehensive risk register is a living document and has developed since a number of risk assessment workshops were held in 2004/5 that involved the relevant directors of the partner authorities, other officers, the Councils' consultancy team and other specialists in the procurement of construction and services for Rapid Transit schemes both in the UK and from Europe. That risk register underwent full review in Spring 2007 when the current project management arrangements were put in place and again in July 2009. Key risks are monitored and reported at monthly project management and project board meetings. Risks are each allocated to named risk owners with key risks being also assigned risk champions from the Project Board.

Figure 6.1 Delivery phase Project Governance Structure



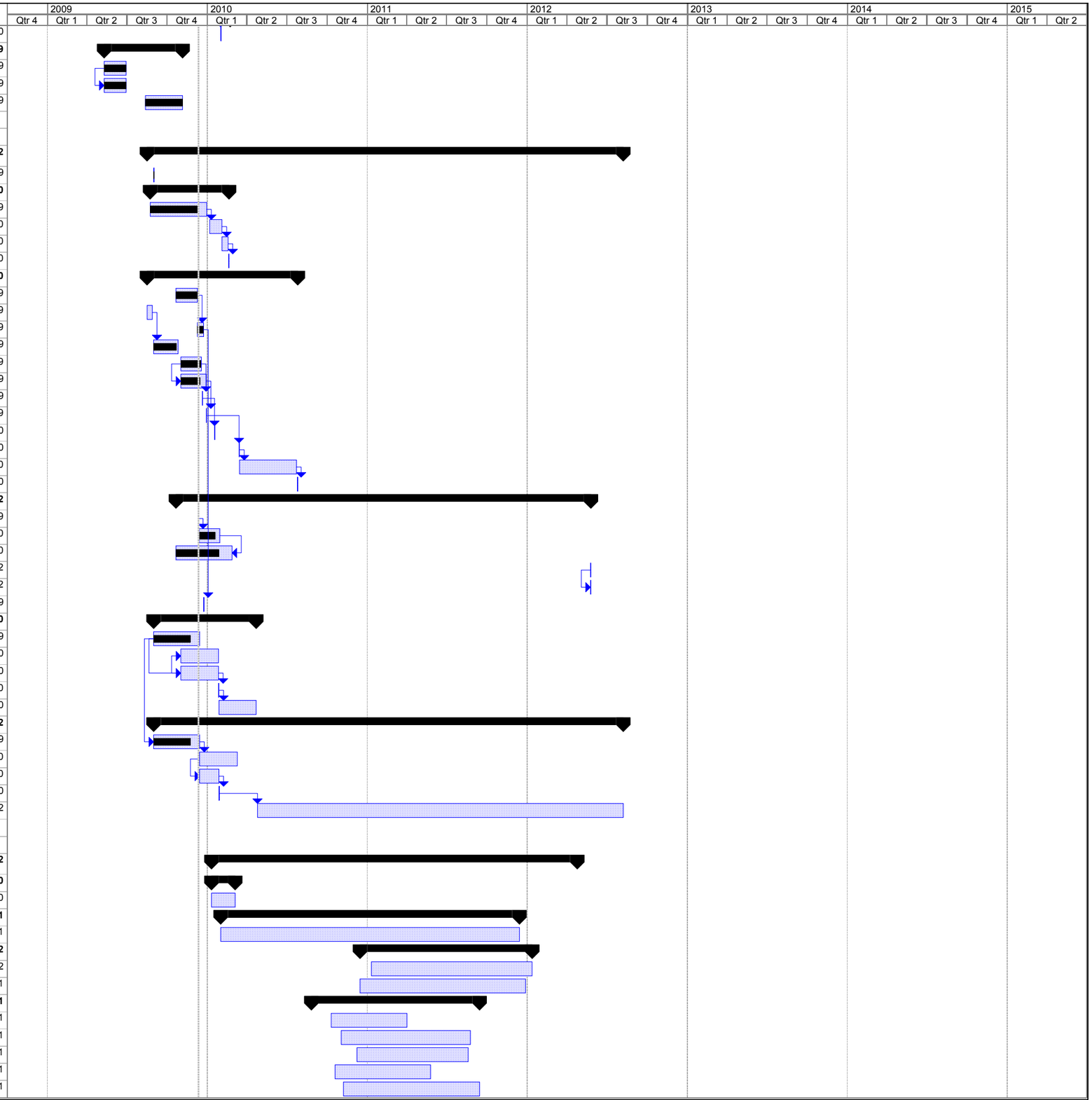
ID	Task Name	Duration	Start	Finish
1	**Luton Dunstable Busway**	**1561 days**	**Fri 02/01/09**	**Tue 03/03/15**
2				
3				
4	**Pre Contract Preparation**	**275 days**	**Fri 02/01/09**	**Mon 01/02/10**
5	**OGC Gateway Reviews**	**3 days**	**Tue 08/12/09**	**Thu 10/12/09**
6	Gateway 3 - Investment Decision	3 days	Tue 08/12/09	Thu 10/12/09
7	**DfT Funding Approvals**	**98 days**	**Wed 09/09/09**	**Tue 26/01/10**
8	**Scheme costs**	**30 days**	**Wed 09/09/09**	**Tue 20/10/09**
9	Land / compensation cost update for FA	30 days	Wed 09/09/09	Tue 20/10/09
10	Prepare & submit Full Approval case	60 days	Mon 21/09/09	Fri 11/12/09
11	DfT Review	30 days	Mon 14/12/09	Tue 26/01/10
12	Full Approval	0 days	Tue 26/01/10	Tue 26/01/10
13	**Internal Political Approval**	**30 days**	**Fri 30/10/09**	**Thu 10/12/09**
14	CBC approval to sign partnering agreement	1 day	Fri 30/10/09	Fri 30/10/09
15	LBC approval to award contract	1 day	Mon 07/12/09	Mon 07/12/09
16	LBC Overview & Scrutiny Board	1 day	Thu 10/12/09	Thu 10/12/09
17	CBC Overview & Scrutiny Cttee	1 day	Tue 24/11/09	Tue 24/11/09
18	CBC approval to award contract	1 day	Tue 08/12/09	Tue 08/12/09
19	**Design Development**	**46 days**	**Fri 02/01/09**	**Fri 06/03/09**
20	**Stats issues**	**45 days**	**Fri 02/01/09**	**Thu 05/03/09**
21	trial pits	45 days	Fri 02/01/09	Thu 05/03/09
22	discussions with Sus	45 days	Fri 02/01/09	Thu 05/03/09
23	**Drainage**	**46 days**	**Fri 02/01/09**	**Fri 06/03/09**
24	Develop drainage principles	30 days	Fri 02/01/09	Thu 12/02/09
25	Liason with Environment Agency	30 days	Fri 16/01/09	Thu 05/03/09
26	Agreement on drainage principles	1 day	Fri 06/03/09	Fri 06/03/09
27	**M1 Bridge Survey**	**156 days**	**Mon 02/02/09**	**Mon 14/09/09**
28	M1 bridge principal inspection	30 days	Mon 02/02/09	Fri 13/03/09
29	M1 bridge assesment	40 days	Mon 20/07/09	Mon 14/09/09
30	**Procurement**	**185 days**	**Wed 13/05/09**	**Mon 01/02/10**
31	**ITT**	**185 days**	**Wed 13/05/09**	**Mon 01/02/10**
32	Assemble tender package	5 days	Wed 13/05/09	Tue 19/05/09
33	**Tender period**	**89 days**	**Wed 20/05/09**	**Wed 23/09/09**
34	Issue ITT	1 day	Wed 20/05/09	Wed 20/05/09
35	Tenderer site visits	5 days	Mon 08/06/09	Fri 12/06/09
36	Tenderer notification of alternatives	5 days	Mon 15/06/09	Fri 19/06/09
37	Tenderer risk registers returned	20 days	Mon 15/06/09	Fri 10/07/09
38	Alternatives meetings with Tenderers	5 days	Mon 22/06/09	Fri 26/06/09
39	Tenderer written notice of alternatives	10 days	Mon 29/06/09	Fri 10/07/09
40	Tenderer mid tender meetings	5 days	Mon 06/07/09	Fri 10/07/09
41	Individual risk workshops	5 days	Mon 13/07/09	Fri 17/07/09
42	Employer response to alternatives	5 days	Mon 13/07/09	Fri 17/07/09
43	Revised risk register issued to tenderers	10 days	Mon 20/07/09	Fri 31/07/09
44	Tenderer response to risk register	5 days	Mon 03/08/09	Fri 07/08/09
45	Tenderer submission of draft AIPs	10 days	Mon 20/07/09	Fri 31/07/09
46	Tenderer response to risk register	5 days	Mon 03/08/09	Fri 07/08/09
47	Final risk register issued	10 days	Mon 17/08/09	Fri 28/08/09
48	Final draft AIPs confirmed acceptable	5 days	Mon 24/08/09	Fri 28/08/09
49	Tenderer Contents & Submission meetings	5 days	Mon 07/09/09	Fri 11/09/09
50	Tender return	0 days	Wed 23/09/09	Wed 23/09/09
51	**Tender Assessment**	**27 days**	**Thu 24/09/09**	**Fri 30/10/09**
52	Individual Quality Assessments	7 days	Thu 24/09/09	Fri 02/10/09
53	Quality Assessment workshop	1 day	Mon 05/10/09	Mon 05/10/09
54	Financial Assessment	12 days	Thu 24/09/09	Fri 09/10/09
55	Tenderer interviews	1 day	Mon 12/10/09	Mon 12/10/09
56	Validation checks	3 days	Tue 13/10/09	Thu 15/10/09
57	Quality score review	1 day	Fri 16/10/09	Fri 16/10/09
58	Price / Quality Assessment	1 day	Mon 19/10/09	Mon 19/10/09
59	Identify Preferred Bidder	1 day	Tue 20/10/09	Tue 20/10/09
60	Preferred bidder confirmation (Project Board)	10 days	Mon 19/10/09	Fri 30/10/09
61	Contract negotiation	25 days	Fri 11/12/09	Mon 18/01/10



Project: Overall programme
Date: Fri 11/12/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

ID	Task Name	Duration	Start	Finish
62	Contract Award	1 day	Mon 01/02/10	Mon 01/02/10
63	**Ecological Tasks**	**127 days**	**Mon 11/05/09**	**Thu 05/11/09**
64	Presence / absence surveys at receptor site (reptiles)	35 days	Mon 11/05/09	Mon 29/06/09
65	Monitoring of translocated orchids / new translocations	35 days	Mon 11/05/09	Mon 29/06/09
66	Reptile translocation	60 days	Thu 13/08/09	Thu 05/11/09
67				
68				
69	**Land Assembly**	**754 days**	**Mon 17/08/09**	**Tue 07/08/12**
70	Appoint Solicitors	1 day	Tue 01/09/09	Tue 01/09/09
71	**Appoint Surveyors**	**127 days**	**Mon 24/08/09**	**Fri 19/02/10**
72	Prepare contract documents	90 days	Mon 24/08/09	Wed 30/12/09
73	Tender process to appoint surveyors	20 days	Thu 07/01/10	Wed 03/02/10
74	Assessment period	10 days	Thu 04/02/10	Wed 17/02/10
75	Surveyors appointed	1 day	Fri 19/02/10	Fri 19/02/10
76	**BRB land acquisition**	**239 days**	**Mon 17/08/09**	**Mon 26/07/10**
77	Agree compensation	35 days	Thu 22/10/09	Wed 09/12/09
78	instruct legal	10 days	Mon 17/08/09	Fri 28/08/09
79	BRB ratify terms	10 days	Thu 10/12/09	Wed 23/12/09
80	prepare contract	40 days	Tue 01/09/09	Mon 26/10/09
81	prepare GVD 1	35 days	Mon 02/11/09	Fri 18/12/09
82	prepare GVD 2	40 days	Mon 02/11/09	Tue 29/12/09
83	GVD 1 sealed	1 day	Mon 21/12/09	Mon 21/12/09
84	GVD 2 sealed	1 day	Wed 30/12/09	Wed 30/12/09
85	GVD 1 land vests in LBC	1 day	Mon 18/01/10	Mon 18/01/10
86	GVD 2 land vests in LBC	1 day	Mon 15/03/10	Mon 15/03/10
87	Title registered	90 days	Tue 16/03/10	Fri 23/07/10
88	Completion	1 day	Mon 26/07/10	Mon 26/07/10
89	**Network Rail land acquisition**	**656 days**	**Thu 22/10/09**	**Fri 25/05/12**
90	Agree Heads of Terms	1 day	Fri 11/12/09	Fri 11/12/09
91	Overarching agreement	33 days	Mon 14/12/09	Fri 29/01/10
92	Asse Protection Aagreement	90 days	Thu 22/10/09	Fri 26/02/10
93	Ground Lease	1 day	Fri 25/05/12	Fri 25/05/12
94	Easement	1 day	Fri 25/05/12	Fri 25/05/12
95	completion	1 day	Thu 24/12/09	Thu 24/12/09
96	**Remaining permanent land acquisition**	**164 days**	**Tue 01/09/09**	**Thu 22/04/10**
97	Land Registry searches	75 days	Tue 01/09/09	Mon 14/12/09
98	Prepare land plans	60 days	Mon 02/11/09	Tue 26/01/10
99	Prepare General Vesting Declaration (GVD) 4	60 days	Mon 02/11/09	Tue 26/01/10
100	GVD 4 sealed	1 day	Wed 27/01/10	Wed 27/01/10
101	Land vests in LBC	59 days	Thu 28/01/10	Thu 22/04/10
102	**Temporary land acquisition**	**744 days**	**Tue 01/09/09**	**Tue 07/08/12**
103	Land Registry searches	75 days	Tue 01/09/09	Mon 14/12/09
104	Prepare land plans	60 days	Tue 15/12/09	Wed 10/03/10
105	Prepare GVD 5	30 days	Tue 15/12/09	Wed 27/01/10
106	GVD 5 sealed	1 day	Thu 28/01/10	Thu 28/01/10
107	LBC takes possession	579 days	Mon 26/04/10	Tue 07/08/12
108				
109				
110	**Construction**	**579 days**	**Mon 11/01/10**	**Tue 24/04/12**
111	**Site Clearance**	**40 days**	**Mon 11/01/10**	**Fri 05/03/10**
112	work	40 days	Mon 11/01/10	Fri 05/03/10
113	**Design work**	**475 days**	**Mon 01/02/10**	**Wed 14/12/11**
114	Design period	475 days	Mon 01/02/10	Wed 14/12/11
115	**Construction**	**270 days**	**Thu 16/12/10**	**Thu 12/01/12**
116	Guided busway	255 days	Tue 11/01/11	Thu 12/01/12
117	Unguided busway	260 days	Thu 16/12/10	Wed 28/12/11
118	**Major Structures**	**265 days**	**Fri 27/08/10**	**Wed 14/09/11**
119	M1 bridge modifications	122 days	Mon 11/10/10	Fri 01/04/11
120	Church Street bridge (Dunstable)	204 days	Wed 03/11/10	Wed 24/08/11
121	Skimpot Road bridge	175 days	Thu 09/12/10	Fri 19/08/11
122	Kingsway brdige	150 days	Wed 20/10/10	Wed 25/05/11
123	Clifton Road bridge	215 days	Mon 08/11/10	Wed 14/09/11



Project: Overall programme
Date: Fri 11/12/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

ID	Task Name	Duration	Start	Finish
124	Dunstable Road bridge	150 days	Tue 14/12/10	Wed 20/07/11
125	Telford Way bridge	155 days	Thu 28/10/10	Fri 10/06/11
126	Crawley Green Road bridge	70 days	Fri 27/08/10	Fri 03/12/10
127	**Statutory Undertakers' works**	**264 days**	**Tue 22/02/11**	**Wed 07/03/12**
128	diversons etc	264 days	Tue 22/02/11	Wed 07/03/12
129	**Commissioning**	**60 days**	**Mon 30/01/12**	**Tue 24/04/12**
130	Commissioning period	60 days	Mon 30/01/12	Tue 24/04/12
131				
132	**Works away from segregated route**	**497 days**	**Mon 01/02/10**	**Wed 18/01/12**
133	Dunstable Loop	400 days	Mon 01/02/10	Wed 31/08/11
134	Off busway stops	200 days	Mon 04/04/11	Wed 18/01/12
135	Technology / Comms	100 days	Fri 26/08/11	Wed 18/01/12
136				
137				
138	**Post Construction & Evaluation**	**1555 days**	**Mon 12/01/09**	**Tue 03/03/15**
139	**OGC Gateway Reviews**	**288 days**	**Tue 17/04/12**	**Thu 06/06/13**
140	Gateway 4 - Readiness for Service	3 days	Tue 17/04/12	Thu 19/04/12
141	Gateway 5 - Benefits Realisation	3 days	Tue 04/06/13	Thu 06/06/13
142	**Testing & Commisioning**	**60 days**	**Wed 01/02/12**	**Thu 26/04/12**
143	Commissioning of traffic signals (link to const pgme)	60 days	Wed 01/02/12	Thu 26/04/12
144	Commissioning of CCTV	60 days	Wed 01/02/12	Thu 26/04/12
145	Commissioning of Comms	60 days	Wed 01/02/12	Thu 26/04/12
146	Bus operator testing of infrastructure	60 days	Wed 01/02/12	Thu 26/04/12
147	**Transfer of Assett to LBC**	**41 days**	**Fri 27/04/12**	**Tue 26/06/12**
148	Snagging list	5 days	Fri 27/04/12	Thu 03/05/12
149	Fixes	20 days	Fri 04/05/12	Mon 04/06/12
150	Acceptance	5 days	Tue 12/06/12	Mon 18/06/12
151	Transfer of asset to LBC	5 days	Tue 19/06/12	Mon 25/06/12
152	Opening of Busway	1 day	Tue 26/06/12	Tue 26/06/12
153	**Evaluation**	**1555 days**	**Mon 12/01/09**	**Tue 03/03/15**
154	Pre Operations Monitoring	253 days	Mon 12/01/09	Fri 08/01/10
155	Post Operations Monitoring	400 days	Mon 08/07/13	Tue 03/02/15
156	Evaluation Report	20 days	Wed 04/02/15	Tue 03/03/15
157				
158				
159	**Bus Operations**	**747 days**	**Mon 09/03/09**	**Fri 17/02/12**
160	**Development Period Agreement**	**90 days**	**Thu 26/03/09**	**Tue 04/08/09**
161	Drafting of legal agreement	60 days	Thu 26/03/09	Tue 23/06/09
162	Agreement sent to Operators	30 days	Wed 24/06/09	Tue 04/08/09
163	**Expressions of Interest**	**71 days**	**Mon 09/03/09**	**Fri 19/06/09**
164	Prepare draftService Delivery Plan (SDP)	70 days	Mon 09/03/09	Thu 18/06/09
165	Prepare draft Expresions of Interest (EoI) advert	10 days	Thu 09/04/09	Fri 24/04/09
166	Project Board approval of advert/SDP	1 day	Mon 27/04/09	Mon 27/04/09
167	Publish EoI advert	1 day	Fri 15/05/09	Fri 15/05/09
168	EoI period	25 days	Fri 15/05/09	Fri 19/06/09
169	**Partnership Agreement**	**87 days**	**Fri 25/09/09**	**Wed 27/01/10**
170	Prepare draft ouput specification	50 days	Fri 25/09/09	Thu 03/12/09
171	Approval of output spec	1 day	Thu 03/12/09	Thu 03/12/09
172	Draft Partnership agreement	35 days	Fri 04/12/09	Mon 25/01/10
173	Approval of agreement	1 day	Tue 26/01/10	Tue 26/01/10
174	Agreement sent to Operators	1 day	Wed 27/01/10	Wed 27/01/10
175	**Quality Partnership Scheme**	**521 days**	**Thu 28/01/10**	**Fri 17/02/12**
176	Develop scheme specification & definition	385 days	Thu 28/01/10	Fri 05/08/11
177	Informal Consultation with Operators	25 days	Mon 08/08/11	Mon 12/09/11
178	Public Notices	1 day	Tue 13/09/11	Tue 13/09/11
179	Formal Consultation	60 days	Tue 13/09/11	Mon 05/12/11
180	Draft supporting agreement(s)	120 days	Mon 15/08/11	Thu 02/02/12
181	Make Scheme	10 days	Fri 03/02/12	Thu 16/02/12
182	More Public Notices	1 day	Fri 17/02/12	Fri 17/02/12

Project: Overall programme
Date: Fri 11/12/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

7 Stakeholder and Community Liaison

7.1 Communications Strategy

7.1.1 A communications strategy has been produced and is included as Appendix E. This strategy has been endorsed by the Project Management Group (PMG) and the Project Board (PB).

7.1.2 The strategy includes procedures to follow when responding to press queries and an action plan identifying past, present and future activities. The strategy is regularly reviewed at the Communications sub-group meetings and sent to the PMG and PB for periodic updates.

7.2 Stakeholder Engagement

7.2.1 The Communications sub-group has been particularly active over the past year since Conditional Approval was confirmed. Below is a brief summary of stakeholder activities undertaken during this period.

Stakeholder Briefing

7.2.2 A Stakeholder event was held in November 2008 to which all affected or interested stakeholders were invited to learn more about the scheme and the next steps forward. This was a very well attended event with positive feedback from attendees. A further similar event is planned for early 2010.

Various Fora

7.2.3 Project specific updates have been taken to the following fora.

- five Area Committees in Luton
- Race Advisory forum
- Disability Advisory and Access Forum
- Luton Action Against Poverty Forum
- Luton Senior People's Forum
- Luton Youth Forum
- Emergency Services

7.2.4 The Equalities Impact and Health Impact Assessments referred to in Chapter 5 included consultation with key a variety of other stakeholder groups.

7.2.5 In addition to the above five, information sharing events consisting of open sessions with display boards describing the current situation and what happens next, attended by Officers of both Councils to answer questions, were held in Dunstable and Houghton Regis during November 2009.

7.3 Construction Phase

7.3.1 From early 2010 the emphasis of communication will be to inform residents about the inevitable degree of disruption associated with construction work (particularly at the eastern end of the route in Luton where construction impacts are likely to be the most severe). The Councils will plan for potential criticism of the scheme/works from residents and other stakeholders at this stage.

7.3.2 Early in this phase it will be important to identify advocates of the scheme, and ensure that the Councils, together with their partners and other advocates are proactive in engineering opportunities to pro-actively promote the project.

7.3.3 Local residents will be kept informed of progress as construction proceeds through a series of regularly distributed information sheets and a project website.

7.3.4 Each Council will be responsible for its own direct communications (e.g. through residents' magazines and newspapers) and for its own internal communications (to include councillor communications) on the project. In both cases, content will be shared to ensure consistency of message.

7.3.5 The Contractor will have a full time Public Liaison Officer and this person will be responsible for co-ordinating newsletters, information sheets, website content and press activity with project team and the press offices of the two Councils.

7.4 Launch Phase

7.4.1 Leading up to this period the communications and marketing for the opening and launch of busway services will be a key activity. Around 12 months prior to the expected opening of the scheme the sub-group will begin to consider a launch event and start to make necessary arrangements.

7.4.2 The Councils will appoint marketing Consultants, and work with them and local bus operators who have committed to using the Busway to develop the marketing of services and common branding of the stop infrastructure and vehicles, whilst taking account of the Corporate branding of the operators involved. This process will continue once the Busway is operational.

8 Procuring the Design and Construction of the Busway

8.1 Assessment of Procurement Options

8.1.1 The assessment and development of procurement options for construction was discussed in Chapter 17 of the Conditional Approval business case and is therefore not replicated.

8.1.2 An OJEU notice was published in February 2008, and in May 2008 the Project Board approved a shortlist of 3 contractors to be taken forward to the full tender stage. Between May 2008 and the issue of tender documents in May 2009 regular dialogue was maintained with the shortlisted contractors.

8.2 Procurement review and development of the contract documents

8.2.1 Subsequent to the submission of the Conditional Approval business case, the Councils undertook a thorough review of their preferred construction procurement route and development of draft contract documentation. Due to their direct relevant experience with the current Cambridgeshire busway scheme, Atkins were approached and subsequently appointed to assist the Council with this review and to act as a critical friend.

8.2.2 In terms of the development of contract documentation, the review considered:

- Requirements of the quality submission
- Conditions of contract adopted.
- Status and sufficiency of the design information presented.
- Programme and pricing document.
- Process for the management of risk and its inclusion in the tender documents.

8.2.3 The Council's objectives in procuring the design and implementation of the Busway system are to achieve the best possible value, time and quality outcomes in accordance with best procurement practice and to ensure as far as practicable cost certainty at tender stage. In order to meet these objectives the Employer has set the following criteria;

- Cost certainty where possible to promote the optimum outcome in delivering the Whole Life Value and Best Value for the infrastructure asset.
- Time certainty to meet programme with appropriate delay damages to compensate for the consequential effects of Contractor delays.
- Quality imperatives to ensure the optimum Whole Life Cost for the infrastructure asset.
- Compliance with Office for Government and Commerce (OGC) Guidelines on best project procurement and delivery practice.

8.2.4 The review proposed a number of detailed suggestions and amendments with regard to the NEC3 Part1 contract data in order to achieve the Employer's objectives (particularly on the assignment of risk and how the Councils should engage with the Contractors on that issue), the requirements of the Contractors quality and price submissions, and the Programme requirements.

8.2.5 Central to achieving the Employer's objectives for the Luton Dunstable Busway in the proposed conditions of contract are:

- Management of the procurement process.
- Management of the stages of development of the Works Information.
- Identification, management and allocation of price, programme and risk.
- Proper acknowledgement and weighting for Quality in order to ensure proper Whole Life Value for the proposed infrastructure asset.
- Alignment of the Conditions of Contract to achievement of objectives.

8.2.6 The review considered that further work was needed before inviting tenders, particularly in differentiating between illustrative design and mandatory requirements and how best to deal with contract risk. Similar conclusions were drawn regarding the Works Information, which also required further work before inviting tenders including a review to ensure consistency with other parts of the tender documents. The main recommendations made as a result of the review are summarised below:

- To more fully develop the approach to risk during the tender process and into contract.
- To review the Works Information to ensure that the requirements were clearly identified and to resolve ambiguity.
- To review the structure of the Quality Submissions to make them more specific to the Project Objectives.
- To review the Z clauses of the contract to give effect to risk transfer.
- To review the structure of the pricing documents to assist in comparison of tenders, including pricing of risk.

8.2.7 Whilst further discussion took place to finally agree the procurement process, work continued to ensure optimum development of the Works Information and Site Information was achieved, thereby minimising the level of risk.

8.2.8 During Autumn 2008, further discussions commenced with the DfT and the shortlisted contractors about the potential to follow a two stage tendering process. The Project Board were regularly updated about progress in those discussions. The key factor in determining whether to go for a one or two stage process was that, if the Councils adopted a two stage approach, DfT would not be able to confirm funding until after stage two was complete, and this had significant financial implications for the Council. Consequently, and also taking account of the recommendations of the Atkins review, the need for the Council to fund the additional costs, together with the potential impact on the implementation programme for the scheme, led the Council to adopt a one stage tender process. However it was agreed that the single stage process should include significant consideration of the issue of risk.

8.2.9 Early in the Spring of 2009 draft instructions for tendering, Site Information and risk information was issued to the shortlisted contractors and their comments helped inform the final tender documentation.

8.2.10 The tender documents were issued to the short-listed contractors in May 2009. There were regular scheduled meetings with tenderers during the tender period including risk workshops to aid the development of an agreed tender/contract risk register. Tenders were returned on 23 September and the assessment process was undertaken over the following weeks, with two separate teams initially assessing the quality and price submissions, following which workshops were held with each tenderer in mid October to seek clarification on various matters relating to their submissions.

8.2.11 Following clarification of all significant issues the quality and financial panels met to confirm their satisfaction and identified a preferred bidder to be recommended to the Project Board. On 11 November, the Project Board approved the preferred bidder upon whose tender prices this submission is based.

9 Construction of the Busway

9.1 Constructing the Busway

9.1.1 The construction of the Busway, as with other major infrastructure schemes, will cause disruption and is expected to take about two years to complete, followed by a three month period of commissioning and testing of the Busway and associated infrastructure. The impacts of the construction works have been assessed and where possible, mitigation measures will be put in place to minimise disruption. Some properties may be affected directly and consultation will take place to ensure that health and safety requirements are met. A number of planning conditions will apply to the scheme to ensure that the construction impacts are minimised, these were set out in the Conditional Approval business case and are not duplicated here. Since Conditional Approval was confirmed Planning Condition 3 (Ecology) has been discharged by both relevant Local Planning Authorities.

9.2 The Proposed Works

9.2.1 Over the construction period typical activity will include the following:

- diversion or protection of underground pipes and services;
- site clearance and earthworks, including removal of old railway track and sleepers;
- demolition of bridges and construction of new bridges and other structures;
- construction of the Busway, drainage system, parallel access track (incorporating footpath/cycleway) and stops;
- ancillary works, including installation of signal controlled junctions and additional traffic management measures;
- landscaping works;
- improvements to approximately 265 bus stops on the highway network; and
- installation of communications and technology infrastructure at stops both on the core route of the Busway and at the stops on the highway mentioned above.

9.2.2 The longest periods of activity, in addition to the construction of the Busway and the associated access track, relates to the reconstruction of the various bridges along the route.

9.2.3 The Preferred Bidders approach to the construction of the Busway is to use 6 metre long pre-cast units. The Contractor has identified possible sites for location of a casting yard close to the Busway. The individual pre-cast components would then be transported to the site on standard flat-bed lorries equipped with self loading cranes, and assembled in situ. The lorries would be fitted with guidewheels so that once one complete section of guideway track had been laid, the lorries would use that guideway to place the other track.

9.3 Routes for Construction Traffic

9.3.1 There will be several access points from the public highway into the various compounds, worksites and the corridor itself for transport of plant and materials along the corridor. Access points will be made at Blackburn Road, Arenson Way and Court Road (both via Boscombe Road), Skimpot Road, Hatters Way (just west of the M1), Chaul End Lane, Luton town centre and Kimpton Road. Additional temporary access points to short sections of the route will be available at a number of locations along the route.

9.4 Environmental Impacts of Construction

9.4.1 During the construction phase, some degree of community severance and disruption is inevitable including the temporary closure or diversion of roads and footpaths. A Code of Construction Practice (COCP) sets out measures to ensure that disruption is minimised. To

9.4.2 minimise the impact on the highway network, the Busway alignment will be used to carry construction traffic, as far as is practicable.

9.4.3 Vegetation clearance is scheduled to be undertaken during winter 2009/10, outside of the bird nesting season. Protected species known to be present on site have been translocated during the Summer/Autumn 2009 to facilitate winter vegetation clearance. A destructive search will be undertaken prior to clearance work and both this and the clearance will be closely monitored by the ecological clerk of works appointed for the main works to ensure no harm to any remaining slowworms.

9.4.4 A specific Route Biodiversity Action Plan (RBAP) has been developed which includes a section relating specifically to management of biodiversity interests during the construction phase.

9.5 The Code of Construction Practice

9.5.1 The Contractor is required to operate under a Code of Construction Practice (CoCP) which has been approved by both relevant Local Planning Authorities, in addition to the requirements of the RBAP. The CoCP was developed in conjunction with Environmental Health Officers of both Councils.

10 Busway Services & Operation

10.1 Options for Procuring Busway Services

10.1.1 The four options for procuring services to operate on the Busway were summarised in Sections 18.2-18.6 of the Conditional Approval business case and are not replicated here.

10.2 Progress in securing commitment to operate services on the busway

10.2.1 In May 2009, the Councils published an advert in the technical and local press seeking Expressions of Interest in running services on the Busway.

10.2.2 Operators who responded to the advert were sent a copy of a draft document, known as the Service Delivery Plan (SDP). The SDP briefly summarised the scheme and the outline programme to construct, manage and operate the Busway. It continued by describing the Councils initial proposals for settling with bus operators the key components of the plan, in particular the agreements and quality standards to operate services on the Busway, together with arrangements for access, ticketing and fares. An extract from the SDP that sets out these principles is included at Appendix K.

10.2.3 Four operators (First Group, Centrebus, Arriva and UNO) have formally expressed an interest in operating services and meeting with all four took place in August.

10.2.4 Each operator has been invited to sign a Development Agreement, which is intended to regulate the co-operation between the Councils and operators in the period of activity up to the expected opening date of the Busway. A generic copy of the Development Agreement between each operator and the Councils is included in Appendix G. At the time of writing, two of the four operators have already signed the Development Agreement, with the others expected to sign shortly. This process recognises that commercial confidentiality is maintained on matters of service planning, ticketing, and fares co-ordination in order not to contravene the Competition Act.

10.2.5 The Development Agreement recognises that further agreements will be required as the project progresses, culminating if appropriate in a Quality Partnership Scheme. The scope of the other agreements envisaged, is summarised as follows:

Partnership Agreement

10.2.6 Operators will be required to sign up to this agreement in December 2009, prior to the award of a contract to build the Busway. This Agreement will consist of two parts; a generic section covering quality standards and an operator specific section regarding the provision of services. The section on quality standards is based on the development of an output specification that has evolved from the chapter of the draft SDP relating to quality issues, a draft of which is included in Appendix H. This agreement will be a pre-cursor to a formal Quality Partnership agreement. It will cover issues such as (but not limited to) the principles of ticketing initiatives (including multi-operator ticketing), Busway service operations plan and the commitment of the operator to purchase buses.

10.2.7 On the strength of such commitments, the Councils will enter into contracts for the construction of the Busway and associated infrastructure.

Quality Partnership

10.2.8 During the last year of the construction period a formal Quality Partnership agreement will be developed. When completed, operators will be required to sign up to this agreement about six months before the planned opening of the Busway. As indicated in above, this will most likely be a Quality Partnership Scheme (QPS) under the Transport Act 2000 as amended by the Transport Act 2008.

Access and Safety Agreement

10.2.9 About three months before opening of the Busway, each operator will carry out test running to ensure that the Busway and associated infrastructure operates in a safe and reliable manner. They will also carry out various safety and emergency procedure tests to be agreed with the promoting partners.

10.2.10 Once construction is substantially complete and before the Busway is opened, each operator will carry out test running to ensure that the new infrastructure operates in a safe and reliable manner and for driver training on the guideway. Operators will also carry out various safety and emergency procedure tests to be agreed with the Councils and emergency services. Before entering this testing phase operators will be required to sign up to an Access and Safety Agreement outlining the conditions under which they will be able to access the Busway, and the safe operation of the Busway. This agreement will incorporate an operations handbook which will set out the procedures to be followed in relation to obstructions, incidents and emergencies on the Busway, including the arrangements for the recovery of broken down buses from the Busway. The Access and Safety agreement will also cover issues such as (but not limited to) the provision/operation of a control centre for vehicle recovery, and the communications interface between bus drivers, passengers, and the Operator.

10.3 Bus Operator involvement during construction

10.3.1 Bus operators likely to use the Busway will be consulted on relevant construction aspects of the Busway such as tapers at entry points and stop infrastructure locations. It is also anticipated that, early in the implementation phase, operators will need to place orders for sufficient new vehicles to implement their Busway service plans. The minimum specification for Busway vehicles is currently under discussion with Operators. Operators will also be consulted upon the impact of the construction methodology on existing service operations.

11 Monitoring and Evaluation

11.1 Background

11.1.1 The Benefits Realisation Plan sets out the management and responsibilities for delivery of benefits during the design, construction and operation of the Busway. The focus for the Monitoring and Evaluation Programme is on measuring performance, understanding scheme impacts and disseminating this to Government and wider stakeholders, and essentially covers two types of evaluation:

- process evaluation - considers the processes and operations behind the development, ongoing implementation and delivery of the scheme; and
- impact evaluation - assesses the effectiveness of the intervention based on collection and analysis of evidence in relation to scheme outcomes/objectives

11.2 Benefits Realisation Plan

11.2.1 A Benefits Realisation Plan has been prepared for the Busway scheme and can be found at Appendix I. The plan sets out the approach to managing benefits, as well as the method of tracking their realisation. It defines when benefits will be realised and the relationship between forecast benefits and actual benefits, how benefits should be managed actively and who will be responsible for delivering those benefits.

11.3 Evaluation Strategy

11.3.1 An Evaluation Strategy has been prepared for the Busway scheme and can be found at Appendix J. The strategy aims to evaluate the overall effectiveness of the scheme and of types of impact once operational. It will also provide 'operational' information enabling more effective operations and integration within the community and associated transport networks; and maintain an understanding of scheme implementation and make recommendations regarding possible future initiatives of a similar nature.

11.3.2 Both the Benefits Realisation Plan and the Evaluation Strategy will rely heavily on baseline data collected in the 'pre-busway' situation, ie now, and the monitoring sub-group is charged with ensuring that all required data is available. Much of this comes from Local Transport Plan and other indicators already collected but where other data requirements are identified which are not currently routinely collected separate arrangements will be made to ensure appropriate baseline data is available to facilitate appropriate future monitoring and evaluation.