



South Bristol Link

Value Engineering Workshop and Addendum

November 2010 and September 2011

North Somerset and Bristol City Councils



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North Somerset Council, Somerset House, Oxford Street, Weston-super-Mare.
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Executive Summary

The Coalition Government announced the outcome of the Comprehensive Spending Review on the 20th October. On the 26th October, the Department for Transport published their document, “Investment in Local Major Transport Schemes”. In this document, the process for prioritising such schemes within the current Review Period is set out.

As confirmed in the DfT document, the South Bristol Link (SBL), is included in the pool of “Pre-Qualification Schemes”. Promotors are asked to confirm that they still wish to seek Government funding for the scheme. The guidance also asks for promotors to review the scheme to identify potential cost savings to ensure maximum value for money and affordability. Promotors are also asked to consider whether the proportion of costs met locally can be increased.

A high level value engineering workshop was arranged in order to carry out the necessary review of the scheme to determine what costs savings could be identified and the likely consequences of adopting any of these in terms of the scheme objectives.

The workshop was held on the 18th November 2010. Potential cost savings resulting from reducing the scope of the works were identified. In addition a review was carried out of other costs to determine whether changes in market conditions might also lead to savings in overall scheme costs. The reduced scope reductions were compared by setting potential cost savings against the likelihood of deliverability. Only those options considered reasonably likely were taken forward however it was acknowledged at the time that the view of deliverability held at the time of the workshop would require wider review. The results of this wider consultation have been incorporated into this report. In addition an overview of all major projects has sought to ensure a consistent approach to compliance with the DfT guidance. Changes to ensure consistency have also been included.

The outcome of the workshop, subsequent wider consultation and measures to ensure consistency has led to a variation to the Lower Cost Option being taken forward as the revised scheme option. The scheme has a direct and segregated Rapid Transit link to the proposed Aston Vale to Temple Meads Rapid Transit scheme. Savings elsewhere reflect market conditions and anticipated savings through value engineering. To the east of the A38 some reduction in the level of segregation for the Rapid Transit element is proposed.

Significant financial savings have been identified and are set out in the report. The total out-turn costs have been reduced from £57.4m to £44.6m. The proposed DfT contribution is also reduced from £50.3m to £26.7m. The local contributions would increase from £7.1m to £ 17.8m.

The above savings were submitted to the Dft following the Government's 2010 Comprehensive Spending Review as an Expression of Interest in December 2010. The Councils were invited to submit a further Best and Final Bid in September 2011. Further value management assessment was undertaken as part of the BAFB submission which confirmed the costs savings from the November 2010 and is summarised as an addendum to this November 2010 Value Engineering Workshop Report

1. Introduction

The Coalition Government announced the outcome of the Comprehensive Spending Review on the 20 October 2010. The Department for Transport (DfT) announced plans for major schemes on the 26th October and issued the document "Investment in Local Major Transport Schemes"

The DfT explained that the full pipeline of schemes prioritised under the previous system of Regional Funding Allocations is not affordable. A new process has been put in place to prioritise and rationalise the existing programme.

To undertake the prioritisation, the DfT have divided schemes already granted Programme Entry lodged with DfT before the 10th June 2010 into three "pools"; the "Supported Pool" the "Development Pool" and the Pre-Qualification Pool"

The South Bristol Link (SBL) is in the Pre-Qualification Pool because the DfT had not, at that time, completed a value for money assessment. The DfT will conduct a preliminary assessment on schemes in the Pre-Qualification pool with a view to making decisions by January 2011 as to which should join a Development Pool to be taken forward for further analysis.

It is acknowledged in the document "Investment in Local Major Transport Schemes" that a well functioning transport system is essential to the proper operation of Britain's economy. The document also sets out the Coalition Government's ambition to devolve decision making to local authorities. The document makes it clear that in order to secure value for money and to ensure Government funding goes as far as possible, promoters of schemes are to be challenged to review options for cost reductions, including scope changes that improve value for money and increased local contributions and to maximise opportunities presented by a soft contracting market.

In response to this challenge from the Government and in order to meet the deadline for submissions a workshop was commissioned in order to carry out the review of the SBL scheme. The workshop was held on the 18th November 2010.

2. Scheme Description

The preferred scheme option for the SBL, which was submitted to the Department for Transport (DfT) in March 2010, would provide a transport link approximately 5km long between the A370 Long Ashton bypass west of Bristol and Hengrove Park in South Bristol. The link would include new and existing highway, new rapid transit and an adjacent segregated cycle and pedestrian route.

The route follows an alignment that has been safeguarded in local plans for many years. Further detailed description is included below.

The Scheme's local objectives were considered carefully at project inception, following preparation of an initial review of historic projects that were seen as relevant to the SBL. The objectives are:-

- to facilitate regeneration and growth in South Bristol;
- to reduce congestion in South Bristol and adjacent areas of North Somerset;
- to improve accessibility from South Bristol to the city centre and to strategic transport links, including the trunk road network and Bristol International Airport.

The Preferred Scheme has evolved through a comprehensive appraisal process. It provides a solution that best meets national and local requirements and accords with DfT appraisal criteria as current at the time.

The scheme comprises four distinct elements each of which is needed in order to meet the objectives effectively:-

- Extending rapid transit from Long Ashton Park & Ride site (Ashton Vale to Temple Meads Rapid Transit line) to the new Community Hospital, Campus and Leisure Centre at Hengrove Park in South Bristol;
- A single carriageway highway between the A370, the A38 and the existing A4174 at the Cater Road Roundabout;
- Cycling and pedestrian facilities parallel to the rapid transit and highway elements that will link to existing facilities;
- Traffic management measures on surrounding highways to maximise the benefits of the Scheme, by discouraging traffic from using less appropriate routes, and to accommodate increases in traffic predicted at key points in the network.

The rapid transit, highway and cycle and pedestrian elements will be constructed adjacent to one another, within the same corridor, except near the A370 where the highway and rapid transit elements diverge.

The scheme overview is shown in Figure 2.1

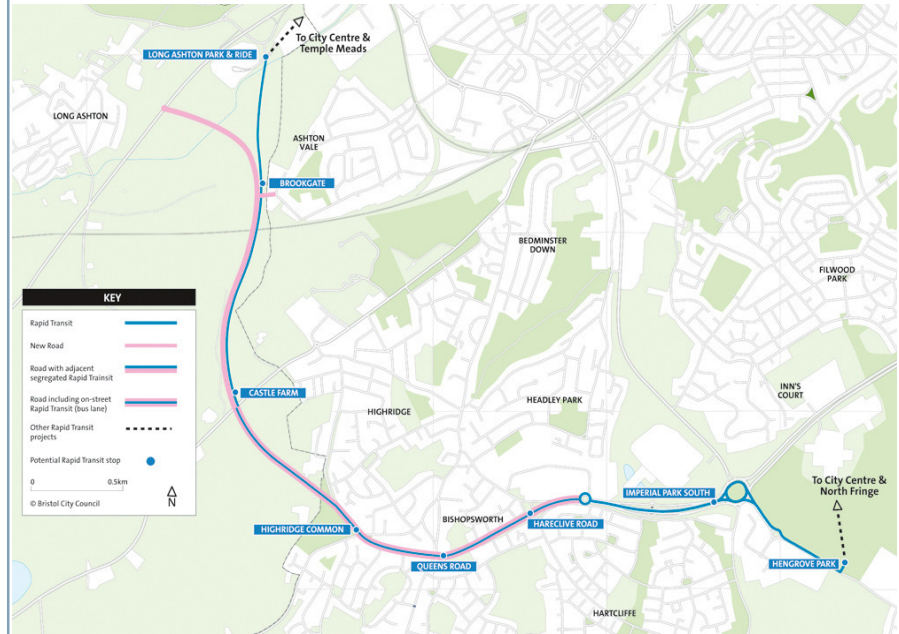


Figure 2.1: South Bristol Link – Preferred Option

3. Workshop

3.1 Workshop Arrangements

The workshop was held at Mott MacDonald's Prince Street offices in Bristol on the 18th November 2010. The workshop was attended by the following:

| | |
|----------------------|-----------------------------|
| Peter Davis | West of England Partnership |
| Stephen Lawrence | Mott MacDonald |
| Paul Paton | North Somerset Council |
| Chris Rice | Mott MacDonald |
| Mike Sweet | Bristol City Council |
| Karuna Tharmananthar | North Somerset Council |
| Colin Walker | Mott MacDonald |
| James Willcock | North Somerset Council |

The agenda for the workshop was as follows:

| Time | Item |
|-------------|--|
| 9:00-9:10 | DfT Criteria – What is to be asked of the DfT? |
| 9:10-9:45 | Reducing the scope of the project |
| 9:45-10:30 | Value Engineering |
| 10:30-10:40 | Land & Environment |
| 10:40-11:00 | Design & Build |
| 11:00-11:30 | Risk |
| 11:30-11:40 | Inflation |
| 11:40-12:00 | Preparation |
| 12:00 | Close |

Table 3.1: Workshop Agenda

3.2 DfT Criteria – Does the Scheme Comply?

Reference to the DfT document made it clear as to what criteria would be used to assess whether a scheme in the Pre-Qualification Pool would be moved to the Development Pool.

Decisions will be based on:

- “ability to deliver significantly within the spending review period”
- “scope for reduced DfT contributions from those most recently requested”
- “to demonstrate a compelling value for money case”

Further technical guidance is to be issued on modelling and appraisal information required should the scheme be selected for the Development Pool.

It was pointed out during the workshop that in the programme included in the submitted Major Scheme Business Case (MSBC), it had been planned for work to start at the beginning of 2015. With some slippage, this could fall outside the review period. It was agreed that the programme should be reviewed to see if the programme could be shortened. The guidance explained that the Conditional Approval stage had been abandoned. This gave promoters more flexibility to progress scheme tasks in tandem albeit at risk. It was considered that the ability to deliver significantly within the Review Period could be satisfied and that the workshop should continue.

The main purpose of the workshop was to identify potential cost savings. Participants had come to the workshop with suggestions to mind. It should be possible to satisfy this criteria. The funding requested of the DfT for the Preferred Option was £50.32m at outturn costs which represented 89% of the total scheme costs.

The submitted Preferred Scheme had a Benefit to Cost Ratio of 5.8. This was a high value. If substantial cost savings could be identified with limited or no effect on benefits then value for money should be improved.

It was concluded that the Scheme should be taken forward to Expression of Interest stage.

3.3 Reducing the Scope of the Project

In order to comply with the ambitions of the DfT’s document, the justification for the various component parts of the SBL were examined again. Those attending the workshop had been asked to consider options in advance and to table them for discussion.

It was agreed that the engineering works provided the bulk of the scheme costs and that reductions in these costs would normally be reflected in all the other associated costs.

To enable a quantified comparison of suggestions, an approximate estimate had been made in advance of the workshop for those options notified. Costs savings quoted below are at baseline costs (2009) and compared with the Preferred Option works cost of £26.331m. It had been agreed that there was insufficient time to produce detailed estimates for each suggestion and estimates to an accuracy of £0.1m were considered adequate. This was achieved by setting up a list of suggestions for each of the geographical sections used to price the original scheme. Suggestions could be given approximate cost estimates by using the equivalent Preferred Option or Lower Cost Option or a percentage of either as best suited the suggested change.

It was also emphasised that although no suggestion would be discounted out of hand, it would need to not only offer cost savings but also meet the minimum requirements of the scheme objectives.

3.3.1 A – The Lower Costs Option.

Promote the Lower Cost Option (saving £3.1m works costs).

Benefits: The Lower Costs Option was fully appraised for benefits and costs. The BCR was very slightly higher, 5.88 compared with 5.79. However it failed to deliver many of the non-monetised benefits and in particular it did not provide the high profile public transport service that is considered essential to attract existing car users.

3.3.2 B – The Preferred Option without the climbing lane.

Promote the Preferred Option without the climbing lane on the eastbound approach to the A38 (saving £0.5m works costs).

The saving is derived from construction of a narrower transport corridor to the west of the A38. There may be additional savings by reducing the potential for encountering contaminated ground. This should have little impact on modelled transport benefits and still offers the desired high standard public transport element.

Benefits: The climbing lane was considered advantageous to guarantee free flowing traffic on the approach to the A38 junction. However the impact was not specifically analysed or included in the transport modelling. Its omission would not impact on the BCR already quoted for the Preferred Option.

It should be noted that the Lower Cost Option did not include an additional climbing lane. Instead the proposed bus lane was curtailed at the bottom of the hill and all traffic was to use the inside lane.

3.3.3 C - The Preferred Option but with the Rapid Transit vehicles following Hareclive Road.

Promote the Preferred Option but with the rapid transit vehicles following Hareclive Road to Hengrove Park, making use of existing and newly constructed infrastructure (saving £1.2m works costs).

This option would need to be modelled as it is significantly different from the modelled options. However it would increase the potential patronage of the rapid transit service and utilise existing segregated public transport infrastructure.

Benefits: The originally proposed route to the east of Hareclive Road followed Hengrove Way and ran between a residential area and a commercial estate. Predicted patronage from the stop in that area (Imperial Park South) was predicted to be low compared to other nearby stops. It is considered that following the Hareclive Road route would improve access to the service without significant time delays. The final destination remains unchanged and there is still the potential to interchange with the proposed Hengrove to Northern Fringe Rapid Transit. It is considered that this proposal would increase patronage and therefore improve the BCR.

Subsequent to the workshop it was decided that this proposed variation could not be incorporated at this time. The option had not been taken to public consultation, included in the transport modelling or considered for design feasibility. However it would be an option worthy of further investigation should the scheme secure Development Pool status.

3.3.4 D – The Lower Cost Option but with the segregated link to the proposed Ashton Vale to Temple Meads Rapid Transit.

Promote the Lower Cost Option but with the Preferred Options's direct segregated link to the proposed Ashton Vale to Temple Meads Rapid Transit (saving £2.2m works costs).

Benefits: As stated above, the Lower Costs Option was considered to deliver a less attractive Rapid Transit service. One of the key elements of this was the lack of a direct and shorter link to the proposed Ashton Vale to Temple Meads Rapid Transit. It is considered that although the additional cost might have a minor negative impact on the Lower Cost Option's BCR it will improve the deliverability of the Project. It will also improve the journey time reliability of the Rapid Transit vehicles compared to the Lower Cost Option.

3.3.5 E – The Preferred Option but with no provision for Rapid Transit east of the A38.

Promote the Preferred Option but with no segregated provision for the Rapid Transit east of the A38 (saving £4.4m works costs).

Under this option, the coach service to the airport would have the advantage of the link to the proposed Ashton Vale to Temple Meads Rapid Transit but the Rapid Transit service to Hengrove Park would travel with other traffic.

Benefits: This option retains the service to the airport without change which preserves the financial contribution from that source. The service to the airport is one vehicle every ten minutes currently and will increase. By contrast the Rapid Transit service to the east of the A38 is one vehicle every 18 minutes. The impact of this additional traffic on the road would be very modest, equally in terms of benefit to the Project, the reduced journey-time reliability would have an equally modest impact on the overall BCR particularly when the savings in capital costs are considered. It is thought that this proposal would improve the BCR. It would however reduce the impact of the Public Transport service and therefore might be less effective at attracting car users to use the service.

Subsequent to the workshop and following wider consultation, it was confirmed that this option was most unlikely to secure majority local support.

3.3.6 F – The Preferred Option without any provision for Rapid Transit.

Promote the Preferred Option without any provision for Rapid Transit and not including for possible future Rapid Transit at the railway crossing (saving £12.3m works costs).

This suggestion would deliver the greatest cost saving but eliminates the option of later provision at minimum cost. It does not provide the public transport element which is considered essential to satisfactorily meet scheme objectives and for securing local support.

Benefits: This option delivers a very significant cost saving and would therefore influence the positive side of the BCR. Removing the public transport element would reduce the BCR but to a relatively minor degree. The proposal does remove totally the segregated route for the bus service to the airport. This is likely to threaten the financial contribution from that source. A link that serves road users only would retain the economic and regeneration benefits and the land-take would be reduced. However there would be a reduction in sustainability benefits and it would reduce public support for the scheme in certain

quarters. It is considered that this proposal would not gain sufficient local support.

3.3.7 G – The Preferred Option with a reduced provision for Rapid Transit to the east of the A38.

Promote the Preferred Option but with a reduced provision for Rapid Transit to the east of the A38 (saving £2m works costs).

This suggestion assumes that a single central running lane would be provided for the Rapid Transit vehicle. The vehicle would be able to use the lane in both directions with a signalling system to avoid conflict. It would still provide, at least in part, the desired higher profile public transport provision. However during the workshop concerns were raised about the operation of a two-way centrally located running lane.

Benefits: Maintaining the public transport element unchanged to the west of the A38 would avoid threatening the financial contribution from Bristol International Airport. Providing a single segregated central-running lane would provide in part the high-profile service that was considered essential to secure public support. Benefits should be unchanged by this proposal and there would be a positive contribution from the cost saving. It would reduce the land-take to the east of the A38 and there would be some very minor environmental benefits as a result.

Subsequent to the workshop, it was agreed that some version of reduced but still significant provision, for public transport might secure sufficient local support.

3.3.8 H – The Preferred Option with a signalised junction at the A38 junction.

Promote the Preferred Option with a signalised junction rather than a roundabout at the A38 Junction (saving £0.01m works costs).

In the submitted Preferred Scheme, a roundabout had been favoured for the A38 junction in response to views expressed during consultation. Adopting a signalised junction would require less land and would have some operational benefits. However it was agreed at the workshop that substituting a signalised junction for a roundabout would be unlikely to secure local support.

Benefits: The saving that was determined from this proposal was very small. The impact on the BCR is unlikely to be measurable.

3.3.9 I – The Preferred Option with a protected corridor to allow construction of the full Preferred Option at some future date.

Promote the Preferred Option with no provision for Rapid Transit other than a protected corridor to allow construction of the full Preferred Option at some future date (saving £7.5m works costs).

This suggestion delivers a significant cost saving but does not deliver the desired public transport element which is needed to meet scheme objectives and considered essential for securing local support. This option would be considered less sustainable.

Benefits: Removing the construction costs of the Rapid Transit element would have a positive effect on the BCR whilst there would be only a modest negative impact on benefits. However not providing the public transport element would threaten the financial contribution from Bristol International Airport. This proposal would not reduce the land-take and therefore there would be no reduction in impact on the environment. Sustainability benefits provided by the public transport provision would be lost initially but could be offered at a later date. The Project would be future-proofed.

3.3.10 Comparison of Proposed Reduction of Scope Options

The options were compared by use of a matrix of value (cost savings primarily) against perceived deliverability, set out below.

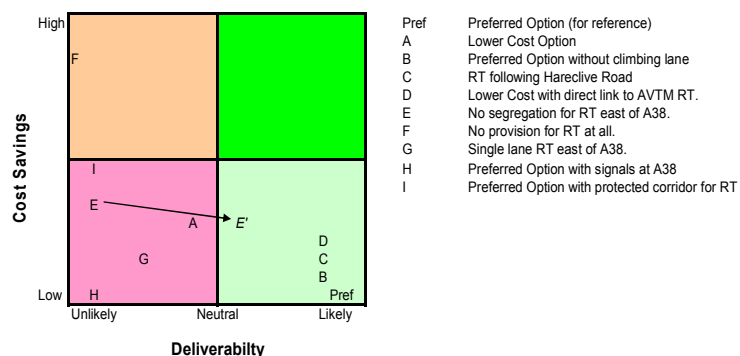


Figure 3.1: Comparison Matrix

All the suggestions were compared with the benefits and deliverability of the Preferred Option. It was not surprising that there were no suggestions that offered high benefits with ease of deliverability. All

suggestions offered some loss of deliverability. Those suggestions considered to offer benefits and also be deliverable were reviewed to confirm whether there was scope for combining beneficial attributes. It was considered that the three “best” suggestions, B,C and D could potentially be combined into a single revised proposal.

Before leaving the comparison it was agreed to reconsider the option for having the rapid transit vehicle running with other traffic to the east of the A38 (E). It was considered that the suggestion might achieve greater local support if the rapid transit were given priority at junctions. It was also thought that this provision could be more in keeping with the frequency of service envisaged. It was considered that the saving for a revised option E’ should be £4.0m rather than £4.4m work costs. It was agreed that this proposal would be subject to further consultation after the workshop

Subsequent to the workshop it was confirmed that the proposal to remove the segregated public transport provision to the east of the A38 would be most unlikely to secure local support and should not therefore be promoted as an alternative to the original Preferred Option. It was however agreed that some reduction might be acceptable as long as significant provision was retained (see Option G).

The combined version was predominantly based on the Lower Cost Option

The scheme overview of this modified version of the Lower Cost option (prior to the review of the abandonment of segregation to the east of the A38) is shown below.

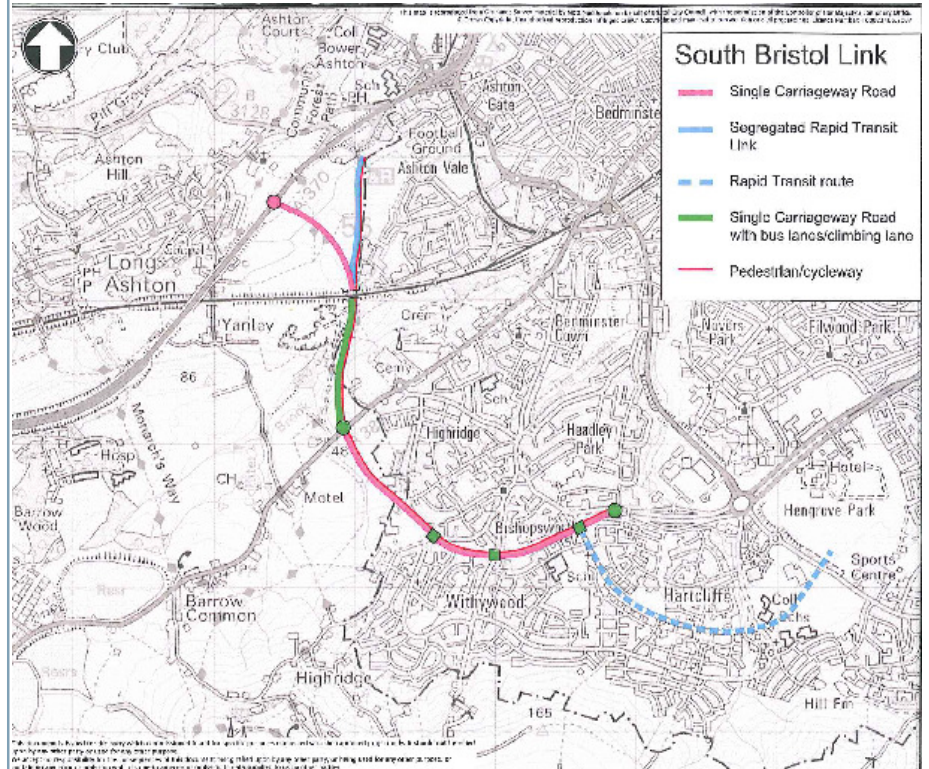


Figure 3.2: Modified Lower Cost Option

Note: The decision to abandon segregation to the east of the A38 and to have the Rapid Transit follow Hareclive Road was reversed after the workshop.

3.4 Value Engineering

Other areas of savings were discussed during the workshop. It was suggested that there might be opportunities to secure cost savings through innovation and collaboration and the DfT document suggests that increased competition in the construction market would be reflected in reduced costs.

Although not costed at the time of the workshop a number of suggestions were made that would be worthy of further investigation to see if additional time of cost reductions could be achieved.

Subsequent to the workshop it was considered that an allowance for the following value engineering suggestions could be incorporated into a revised estimate by applying a 10% reduction to the low risk elements of the cost estimate.

3.4.1 Single Supplier of Guided Bus beams:

The revised proposal incorporates a section of segregated bus-way linking into the Ashton Vale to Temple Meads scheme. This offers the potential to transfer a section of similar work to that contract, to secure economies of scale, particularly if a guided bus-way is adopted as originally planned. (Saving included in a 10% reduction of cost estimate for low risk elements)

3.4.2 Coordination of Service Diversions:

One of the significant risks for the SBL is the diversion of large diameter water mains. These same mains also cross the line of the Ashton Vale to Temple Meads Scheme. Coordination of diversion works for both schemes should allow the affected utility's costs to be minimised. (Saving included in a 10% reduction of cost estimate for low risk elements)

3.4.3 Reduced Design Standards – Avoidance of waste tips:

The alignment of SBL to the west of the A38 has been designed for a 40mph speed limit road. In this area the road passes through an area with a history of waste tipping. The exact extent of the tips is uncertain. Detailed ground investigation is planned. Adopting reduced design standards for a 30mph road would allow options for reducing the volume of material that had to be disposed of to a licensed tip. (Saving included in a 10% reduction of cost estimate for low risk elements)

Alternatively, better knowledge of the extent of historic waste tipping would allow the risk allowance to be reduced.

3.4.4 Packaging Works to encourage good performance

The south-east end of the Project adjoins the proposed Rapid Transit Scheme between Hengrove (South Bristol) and the Northern Fringes (South Gloucestershire). There might be opportunities to combine procurement processes to maximise economies of scale or ensure high quality performance, particularly cost control by packaging works and making the award of future work dependent on good performance.

(Saving included in a 10% reduction of cost estimate for low risk elements)

3.4.5 Reducing inflation costs through an accelerated Programme

The Project Quantified Cost Option included an allowance for inflation. It was considered that inflation costs could be reduced by compressing the programme. Although it was considered that some statutory processes could not be compressed, it was suggested that a single Public Inquiry could be held to cover all contentious areas of the Project. Overall savings could be achieved by having tasks progressing in tandem rather than in sequence. This did however introduce the risk of abortive work should any one essential task or statutory process fail or become significantly delayed. The original programme and the revised programme are included below. (Inflation savings have been included in the predicted outturn costs set out below)

The programme submitted with the MSBC is included below

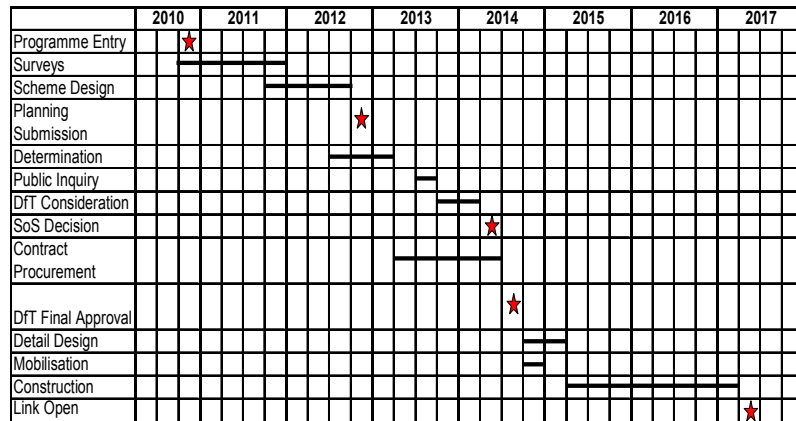


Figure 3.3: Original Programme for the Preferred Option

The suggested accelerated programme is set out below.

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------------------------------|------|-------|-------|-------|-------|-------|-------|------|
| Surveys | | ===== | | | | | | |
| Final Decision on Development pool | | | ★ | | | | | |
| Scheme Design | | ===== | | | | | | |
| Planning | | | | ★ | | | | |
| Submission | | | ===== | | | | | |
| Determination | | | | ===== | | | | |
| Public Inquiry | | | | | ===== | | | |
| DfT Consideration | | | | | ===== | | | |
| SoS Decision | | | | | | ★ | | |
| Contract Procurement | | | | | ===== | | | |
| DfT Final Approval | | | | | | | ★ | |
| Enabling Works | | | | | ===== | | | |
| Detail Design | | | | | | ===== | | |
| Mobilisation | | | | | | | ===== | |
| Construction | | | | | | | ===== | |
| Link Open | | | | | | | | ★ |

Figure 3.4: Accelerated Programme for the Revised Option

3.5 Land and Environment Mitigation

It was considered that the de-scoping options considered during the workshop would only make modest reductions in the required land-take from third parties. It was agreed that for the time being no change in the allowance for land purchase should be made.

It was considered that the de-scoping options considered during the workshop would not involve significant reductions in environmental mitigation or that the modest reductions identified had not been costed. It was agreed that for the time being no change in the allowance for environmental mitigation should be made.

3.6 Design and Build Contractor's Costs

The DfT's document stressed that promoters should review what opportunities there were for taking advantage of the more competitive market in construction. It was agreed that the cost allowance for the contractors costs for the design and build contract were therefore worthy of review. The Contractor's costs were to cover, management, supervision and profit. These costs were determined by applying percentages to the works costs. It was agreed that in the current market conditions, substantial savings could be envisaged.

Originally a figure of £7.932m had been allowed for the Preferred Option. This had been revised prior to the workshop and it was now

suggested that a figure of £3.600m was more appropriate, delivering a saving of £4.332m.

Subsequent to the workshop, the above figures were adjusted to suit the finally agreed works costs.

3.7 Risk

It was understood that under the new guidance, the DfT would not contribute 50% of the costs over and above the Quantified Cost Estimate up to the Approved Scheme Cost as had been the case previously. It was however agreed that the risk assessment part of the Quantified Cost Estimate and therefore a proportion of these costs might be met by the DfT

It was not considered that anything discussed at the workshop had led to a significant reduction in the risk allowance. It had been agreed to retain the railway crossing. There was some scope to reduce the risk of encountering tipped waste material but these potential savings had not yet been costed. It was considered that a ground investigation survey to more fully quantify the volumes of waste tip material would make a significant contribution to understanding of that particular risk. Similarly early liaison with Network Rail and the Public Utilities would help but this would not allow a revised risk allowance to be determined at the time of the workshop.

It was suggested that allowance for risk was an area that could be considered for local contribution by the promoting authorities. It would be an area worth focussing on to gain a fuller understanding all the issues involved.

The Revised Proposal more closely resembles the Lower Cost Option. The Lower Cost Option had slightly higher risk allowances. The appropriate baseline risk allowance for the Lower Cost Option was £5.673m rather than £5.293m a difference of £0.380m. The higher allowance was used in the final cost estimation.

3.8 Inflation

The Major Scheme Business case for the South Bristol Link had assumed levels of inflation suggested by the Department for Transport. A value of 2.7% annual inflation had been assumed until 2014/15. After that time it was recommended that 6% should be allowed for construction costs. It was suggested that it was possible that a lower inflation rate might be appropriate.

Reference was made to the Governments prediction for GDP. According to latest figures published by the Coalition Government and some economists, UK GDP is predicted to grow at the following rates:

2010 - 2.8%
2011 - 2.3% govt. and 1.3% others
2012 - 1.1%
2013 - 1.4%
2014 - 3.1%
2015 - 3.3%

It was noted that following the previous last two recessions of the early 80's (1980 -1982) and early 90's (1990 - 1992), it took 13 quarters (3.25 years) after each period for GDP to recover to that at the start of each recession. The current recession (2008 - 2009) is already being recognised as the longest in post-war Britain and some commentators are suggesting the possibility of a double-dip recession.

It is therefore extremely difficult to predict what will happen to inflation over the next few years. However, based on the above it was suggested that a lower rate than the DfT advised 2.7% for the next couple of years to 2013 could be adopted. A figure of 2.2% for 2011 to 2013 and then 6% for 2014/15.

After discussion and in light of buoyancy in other world markets it was considered that a decision on inflation rates could not be made at the workshop. Advice will be sought from the DfT. It was considered that no saving should be allowed for reduced inflation at the time of the workshop.

Subsequent to the workshop it was agreed that all major projects submitted by the West of England should adopt consistent assumptions for inflation. In the case of the SBL this requires the inflation rate to be amended from 2.7% to 2.79%. When introduced to the inflation calculation, this change added £0.173m to the total out-turn costs

3.9 Preparation

The preparation costs had been determined by the promoting authorities based on previous experience. It was agreed that cost savings might be achievable during the current market conditions but that this could not be relied upon in the longer term. At the time of the workshop it was decided to retain the existing allowance for preparation

Subsequent to the workshop it was agreed that the this position could not be maintained. There had been significant changes to the overall scheme costs and the preparation costs, if not revised to reflect this, would become an inappropriately high proportion of the total costs. A review was carried out of all major projects and it was decided to adopt a uniform proportion (12%) of total costs. This was applied to

SBL and preparation costs fell from £6.362m to £4.793m, a saving of £1.569m at baseline costs.

4. Post Workshop Development

4.1 Revised Quantified Cost Estimate

Following the workshop, the combination of variations identified as worth taking forward were developed in order to arrive at a preliminary Quantified Cost Estimate (QCE) This could be used to clarify what costs savings might be available subject to further scrutiny.

At the workshop it had been suggested that the following savings could be taken forward as a revised proposal.

Impact of de-scoping on the Preferred Option at 2009 prices:

| | |
|--|---------------|
| Preferred Option Costs | £26.3m |
| Promoting Revised Lower Cost Option | -£2.2m |
| Reducing level of segregation to the east of A38 | -£2.0m |
| Transferring Service Diversions to advance works | (-£1.0m) |
| Impact of Value Engineering savings | -£0.6m |
| Additional allowance for Rapid Transit Stops | +£0.2m |
| Revised Total | £20.7m |
| Impact of review of contractor costs | £7.9m |
| Proposed reduction | -£4.3m |
| Revised Total | £3.6m |
| Impact of Risk Allowance increase | £5.3m |
| Proposed increase | £0.4m |
| Revised Total | £5.7m |
| Impact of review of Preparation Costs | £6.4m |
| Proposed reduction | £1.6m |
| Revised Total | £4.8m |

The impact of accelerating the programme and increased Inflation have not been isolated but are included in the final outturn cost estimate.

After the workshop and subsequent feedback and consultation, these altered values were inserted into the inflation tabulation to give out-turn costs. The method used was based on a more detailed breakdown and the total for the combined construction works was actually £20.8m. (The opportunity was taken to increase slightly the allowance for Rapid Transit stops in the Lower Costs Option which had previously been cut severely.)

The scheme total came to £37.6m at 2009 baseline costs.

These revised costs were inserted into the table of headline costs set out above.

Revised Proposal Costs

| | Base Line 2009 | With Inflation |
|------------------------------|-----------------------|-----------------------|
| Cost Element | £m | £m |
| Preparation Costs | 4.793 | 5.349 |
| Engineering Works | 20.772 | 24.919 |
| Contractors Costs | 3.285 | 3.941 |
| Land and Environment | 2.662 | 3.094 |
| Client Supervision of works. | 0.400 | 0.469 |
| Allowance for Risk | 5.673 | 6.806 |
| Totals | 37.585 | 44.578 |

Table 4.1: Revised Proposal Cost Breakdown

It was acknowledged that the DfT’s statement called for a greater contribution by Local Authorities. The division of funding for the South Bristol Link had been set out in the MSBC.

For the Preferred Option the contribution sought from the DfT was £50.317m out of a total scheme cost of £57.386, which was 88% of the total. It is now proposed to seek a contribution of 60% of the total costs of the scheme. That is £26.746m out of a total scheme cost of £44.576m. The local contribution would be £17.830m at outturn costs.

SOUTH BRISTOL LINK /RAPID TRANSIT

BEST AND FINAL BID SUBMISSION
ADDENDUM TO NOVEMBER 2010 VALUE
ENGINEERING WORKSHOP

September 2011

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5. Introduction

5.1 Project Title

South Bristol Link and Rapid Transit

5.2 Purpose of Addendum

This addendum has been produced to support the September 2011 Best and Final Bid (BAFB) Submission for the South Bristol Link scheme.

The original Major Scheme Business Case (MSBC) Document was submitted in March 2010. Following the change of Government and effects of the Comprehensive Spending Review, an Expression of Interest (EOI) Document for the scheme submitted at the end of 2010 set out a revised scheme cost following a review of the scheme by both the promoting authorities and the project design consultants at a Value Engineering Workshop held in November 2010.

This addendum updates the scheme position identifying the value management and value engineering aspects given further consideration and assessment as part of the BAFB submission.

It concentrates on the engineering works costs only therefore excluding potential cost savings from reduced inflation or risk.

6. Value Engineering MSBC to EOI

6.1 Changes to Scheme Costs

The preferred scheme cost submitted with the original Major Scheme Business Case in March 2010 set out a total scheme cost of £57.4m comprising: Engineering Works; Land Cost; Site Supervision Costs; Preparatory Costs and Risk Budget.

The revised scheme cost following the November 2010 Value Engineering Workshop produced a lower total scheme cost of £44.6m with the principle significant reductions being through lower engineering works costs: following de scoping of the scheme; a subsequent reduction in Preparatory Costs; and reduced Contractor cost due to an updated realistic assessment of market competition and conditions.

6.2 Changes to Scheme Engineering

The main changes to offer cost reduction resulting from the Value Engineering Workshop, and submitted as part of the EOI were:

- 1) Rapid Transit link between Long Ashton Park and Ride and Brookgate amended from Guided Bus Way to single two way bus lanes.
- 2) The section between Brookgate Junction, under the mainline railway and up to the A38 Bridgwater road has been altered with the parallel guided bus way elements replaced by outside running bus lanes, and the south east bound highway climbing lane has been removed completely.
- 3) Between the A38, through to the Hartcliffe (Cater Road) Roundabout the scheme comprises a reduced cross section single carriageway route with Rapid Transit vehicles running with highway traffic with Rapid Transit priority measures proposed at the junctions.
- 4) Beyond Hartcliffe Roundabout and up to Hengrove Roundabout; the revised scheme has rapid transit vehicles running with traffic as opposed to within dedicated lanes and has resulted in the removal of the one Rapid Transit stop.

7. Value Engineering EOI to BAFB

7.1 Changes not adopted

The following alterations have been considered but not adopted:

Removal of the bus lanes between A38 and Brookgate junction as vital to operation of Rapid Transit and Airport Flyer bus link to Bristol International Airport.

Removal of parallel foot/cycleway along length of scheme as provision improves accessibility; social and health objectives/benefits in both the rural and urban sections

Omission of resident parking arrangements along King Georges Road within Bristol has been considered but retained within the due to the need to ensure free flow of road and rapid transit traffic to: retain the economic benefits; minimise impacts to individual properties/ residents and the local community and avoid possible associated political and publicity impacts by retaining dedicated parking facilities in line with that currently available.

7.2 Changes Adopted/Confirmed

Roundabout junction at the A38 Junction replaced by a signalised junction which includes rapid transit priority measures on three of the junction arms which provides a fifth cost reduction element to the four listed in 2.2 above.

The proposed signalisation of The Hartcliffe (Cater Road) has been removed with the cost reduction of this item included within item four in section 2.2 above.

7.3 Changes to be considered post BAFB

Alignment change to avoid direct impact on Landfill site at western A370 end of scheme.

Alignment changes in vicinity of Collitor's Brook and between A38 and High ridge Common to reduce: visual, environmental and agricultural impacts.

Use of existing railway underpass for use by pedestrians and cyclists and considering reduced foot/cycleway construction specification.

Routing of cyclists and pedestrians along existing footway and highway infrastructure between Hareclive Road and Hartcliffe Roundabout to omit/reduce new foot/cycleway provision over this section.

Minimised roadworks at Hartcliffe Roundabout by making use of existing layout and pavement subject to assessment on pavement surface condition

8. Final BAFB Scheme Costs

8.1 Changes to scheme Cost

The final out turn scheme cost for the reduced scope BAFB taking into account risk and inflation is £44.58mm

This compares with £57.4m submitted for the MSBC and equates exactly with the £44.6m submitted for the EOI.

The overall outturn cost saving is therefore £12.8m.

The cost reduction follows both the November 2010 Value Management Workshop and subsequent design refinement as part of the BAFB submission. The cost reductions were achieved by amendment and or removal of five major aspects of the scheme and this provided £6.79m of savings excluding risk and inflation.

In addition: as expressed as a percentage of the engineering costs reduction in the design and build costs including: Design; CDM; Safety Audit; Supervision and Contractors fees and profit to the value of £4.30m also resulted.

However the ongoing environmental and land acquisition assessment for the scheme resulted in an increase in the costs of these aspects of the scheme to a value of £1.98m.

The engineering cost savings brought about by the November 2010 workshop and the BAFB assessment work equated to £9.1m excluding risks and inflation

The principle quantum costs savings were achieved through lower preliminaries; earthworks; pavement and kerbing and footways due to the reduced footprint of the scheme. These costs were: £2.42m; £0.63m; £1.38m and £1.39 respectively and totalled £5.82m. Further optioneering on the proposed railway structure provided a further £0.62m. The remaining £0.35m saved resulted from minor reductions in other items including drainage and removal of one of the proposed rapid transit stops.

A breakdown of the cost reductions between the MSBC and the BAFB schemes are out in Appendix A.

The cost reductions from the five major changes made to the scheme equated to:

- 1) £0.35m –Change from Guided bus way to bus lanes between Long Ashton Park and Ride and Brookgate
- 2) £2.18m – Change from parallel guided bus way to outside running bus lanes and removal of climbing lane between Brookgate Junction, under the mainline railway and up to the A38 Bridgwater Road.

3) £2.36m – Removal of bus lanes between the A38, through to the Hartcliffe (Cater Road) Roundabout but with Rapid Transit priority measures at the junctions, including removal of roundabout signalisation at the Hartcliffe roundabout.

4) £0.68m – Removal of dedicated bus lanes and has resulted in the removal of the one Rapid Transit stop between Hartcliffe and Hengrove Roundabouts

5) £0.54 – Change to signalised junction at A38 Bridgwater Road

The total saving from these changes to the scheme equates to £6.05 of the total £6.79m reduction achieved through value engineering on the South Bristol Link scheme.

8.2 Changes in Maintenance costs

The reduction in the scope of the scheme also impacts on the future maintenance costs. An initial review of these indicates that general highways and traffic related yearly maintenance costs and future 20 year cycle pavement resurfacing costs would amount to savings of £15,000 per year and £150,000 every 20 years respectively. In addition maintenance costs originally associated with the Guided Busway element can be considered as being reduced to zero with a potential saving of £3.4m over a 60 year period.

The maintenance costs associated with street lighting including annual maintenance; 25 year lantern replacement; 50 year column replacement; and yearly power costs are considered to be as per the MSBC scheme due to there being negligible alteration in street lighting infrastructure with the BAFB scheme; and with power costs expected to remain high due to increased wholesale costs and future demand.