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WSP

Joint Procurement Strategy Volume 2

West of England Authorities

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West of England

Bath & North East Somerset Council

Bristol City Council

North Somerset Council

South Gloucestershire Council

travel

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Contents

TABLES

FIGURES

Appendix A MCAT Appraisal Outcomes
Appendix B Programme and Cost Analysis
Appendix C Risks Aligned
Appendix D Existing Frameworks / Contracts
Appendix E Ticketing Strategy

1 Introduction

1.1 PROCUREMENT STRATEGY

1.1.1 The West of England Authority (WoE) have commissioned WSP to produce a Procurement Strategy for the following major schemes:

- Ashton Vale to Temple Meads (AVTM) Rapid Transit;
- North Fringe to Hengrove (NFH) Package; and
- South Bristol Link (SBL).

1.1.2 The Bath and Weston Packages are not addressed directly within this Procurement Strategy as they have different requirements and for the following reasons:

- Both schemes, whilst part of the strategic case for meeting West of England travel objectives, are geographically separate from the three rapid transit schemes in terms of achieving any procurement related benefits;
- The Weston Package has a well advanced procurement programme and reduced scale of construction cost from the three rapid transit schemes; and
- The Bath Package has a specific focus on Bath and its scale and context to the three rapid transit schemes means that in terms of procurement in can be delivered separately.

1.1.3 Therefore the focus of this document is on developing and agreeing a procurement strategy across the WoE for the three rapid transit schemes.

1.1.4 The Procurement Strategy sits as part of the overall WoE strategic case to support the DfT Best and Final Bids (BAFB) major scheme submissions. The strategy provides a consistent and coordinated platform for procurement across all the major schemes in the West of England. This strategic case procurement strategy therefore provides the detail that informs and guides the individual BAFB submissions.

1.1.5 WSP's role is to support the WoE in producing this procurement strategy together with input into the individual BAFB preparation and then onwards for ongoing procurement advice through the process by managing the procurement workstream across all of the three rapid transit major schemes through to construction and operation.

1.1.6 This procurement strategy will help realise benefits for each major scheme. It also flexible enough to cater for changing spend profiles whilst providing a robust means of cost control and risk management. It also makes effective use of existing established delivery mechanisms where they are best placed to be used.

1.1.7 A joined up procurement strategy is essential to realise the potential cost efficiencies and to manage risk. It will also ensure consistent quality standards and will provide for delivery of a coordinated rapid transit network. Overall the procurement strategy addresses the following main themes:

- The major schemes programme will in all of its procurement and associated commercial activities ensure that optimal Value for Money solutions are adopted;
- The programme will develop and maintain efficient and effective procedures and processes to support the Value for Money objective described above; and

- The Programme Delivery Board will maintain governance through appropriate systems ensuring that the programme is delivered in line with the Value for Money objective.

1.2 BACKGROUND AND STUDY AREA CONTEXT

1.2.1 All the schemes are within the WoE area, with the three Rapid Transit schemes shown below in Figure 1.1 Geographically there are some common themes with shared infrastructure within the Bristol City Centre and potential synergies for programming and construction in south Bristol.

1.2.2 All three schemes provide for high quality rapid transit routes and involve a consistent mix of well-established engineering construction methods and built infrastructure.

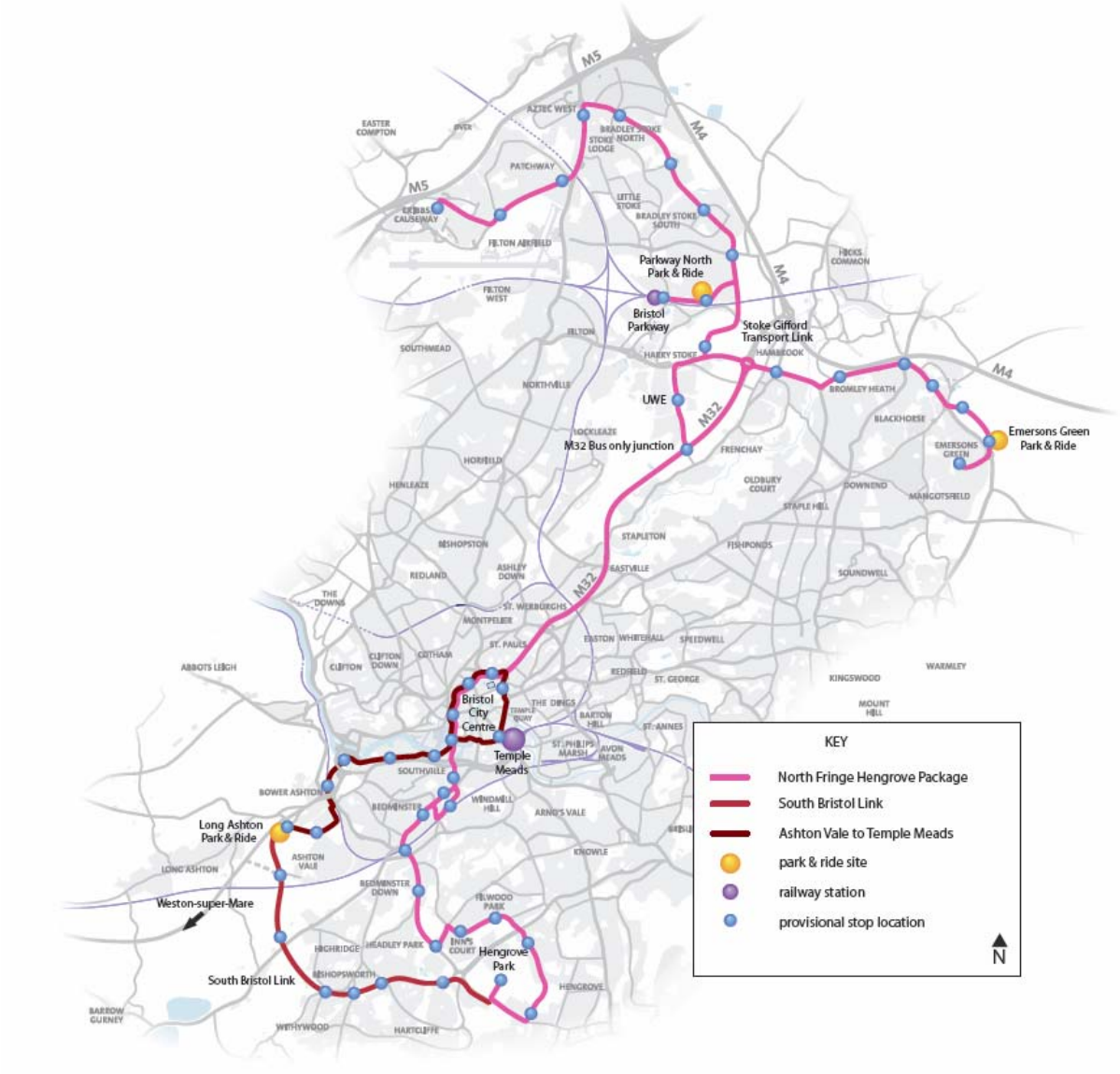


Figure 1.1: WoE Area showing three Rapid Transit schemes

1.2.3 The schemes provide a coordinated network of rapid transit routes that provide cross city routes to promote economic growth, local jobs and regeneration by direct and reliable routes linking homes to jobs.

1.3 SCHEME REVIEW

1.3.1 As part of the development of the procurement process WSP has undertaken an extensive review of the three rapid transit schemes covering the following:

- Extent of schemes, technology used, scheme design, costs, risk, programme and draft procurement options; and
- Interviews with Project Managers, Senior Responsible Owners, Council Procurement Officers and Designers.

1.3.2 A summary of the three schemes is set out below:

- AVTM is primarily a segregated guideway serving a Park & Ride site (currently tendered bus service 903 operated by Wessex Connect) providing links to the City Centre and is approximately 90% segregated;
- NFH comprises a package of bus priority measures (bus-only links, junctions and lanes) and new links on routes between the North and East Fringe and South Bristol; and
- SBL includes bus priority and some segregation at congested junctions and provides new orbital services in South Bristol, with buses feeding directly onto AVTM for the remainder of the journey into the City Centre accounting for a degree segregation when taken with AVTM.

1.3.3 The broad findings are summarised in Table 1.1 and this illustrates the emerging common themes and procurement linkages that were further explored.

Scheme	Ashton Vale Temple Meads (AVTM)	North Fringe Hengrove (NFH)	South Bristol Link (SBL)
Cost (million) inc QRA	£47m (60% guideway and 30% for on street and then 10% schemewide)	£102m (revised from around £194m)	£42m
Guided Length	4250m between Long Ashton Park&Ride and Princes Street Bridge	Access control s that limit access to buses at key route points.	none
On-street Length	City Centre Loop with alterations to 7 signal junctions and approx. 2km of bus lane	All at about 20-25km	5km
TWAO extent	4250m guided only plus cover approx. 500m bus lanes	None	none
Programme	4 years with 2.5 years construction	4 years with 3 years construction	Just under 2 years construction
Main Infrastructure Components	Segregated guideway, stats, structures (Princes Street strengthened, Ashton Avenue Bridge refurb, new ped/cycle bridge and new bridge of Portbury Freight line), ITS, limited flood mitigation, 7 signal junction alterations with bus lanes, Park&Ride	M32 Access junction, New Cut Bridge, Stoke Gifford Transport Link (inc rail over-bridge), approx. 25 junctions and associated sections of bus lane and guideway.	Segregated bus lanes, and new highway, rail under-bridge.
Shared infrastructure	City Centre Loop	City Centre commonality	Connects to Ashton Vale and Hengrove
Common Infrastructure Types	ITS, RTPI, vehicles, stops, signal junctions, bus lanes	ITS, RTPI, vehicles, stops, signal junctions, bus lanes, Motorway junction	ITS, vehicles, RTPI, stops, signal junctions, bus lanes
Key Structures	Princes Street (sensitive design) and Ashton Avenue Bridge	Bridge over railway access to M32 and New Cut Bridge.	New bridge structure under railway
Current Bus Operations	903 Park & Ride service and North Somerset feeder bus services.	High frequency radial routes First in South Bristol. Lower frequency radial routes to North	Poor links so no current operations to replace

Scheme	Ashton Vale Temple Meads (AVTM)	North Fringe Hengrove (NFH)	South Bristol Link (SBL)
		and East Fringe.	
Future Operations	FTR type vehicle with frequency every 6 mins in peak and 12 mins off peak. Estimated at £0.8 million per annum extra over current.	Scheme would build on current operations. Revenue predicted to be cost neutral.	£600k per annum operating cost. Service would be operated as an extension to the AVTM scheme.

Table 1.1: Scheme Review Summary

1.3.4 The shared scheme characteristics can be summarised as follows:

(a) branded network of Rapid Transit Services using high quality vehicles, where the Councils have control over key aspects of service, including branding, frequencies, fare levels, quality etc.;

(b) open access to infrastructure for commercial bus services subject to meeting vehicle quality standards;

(c) prioritised signalling;

(d) dedicated stops/interchanges with real time information and off-board ticketing;

(e) some guided and non-guided busways, some existing, some new busways and some mixed mode;

(f) parallel pedestrian and cycleway along segregated sections;

(g) a joint smartcard style ticketing system; and

(h) CCTV along guided busway and at major intersections and bus lanes elsewhere.

1.3.5 The three rapid transit schemes have varying processes. The AVTM uses Transport and Works Act Order (TWAO) processes due to its guided nature. Both NFH and SBL use 'standard' planning powers and Highways Act procedures.

1.3.6 The TWAO provides for the deemed planning consent, powers to acquire land, powers to operate and other legal aspects to enable delivery. Based on this and the construction of a guided busway there are some specific elements of AVTM that influence the potential procurement strategy.

1.3.7 A bus operator engagement day was held on the 21st July 2011; the views of operators on service options are expressed follow.

1.3.8 The view from operators was broadly for a Quality Partnership Scheme (QPS) type arrangement with selected tendering TRO's on-street linked to Operator Licence restrictions to protect new infrastructure, placing a "licence to operate advert" to invite operators to lodge applications with credible operating proposals that meets quality thresholds and if this didn't attract suitable service levels then tender) to allow commercial market drivers/decision making for frequency and fares etc. In summary a mix of selected tender and commercial operations could be pursued.

1.3.9 Some operators were content with the concept of AVTM having access charges, with open access subject to quality thresholds, and discussion that this income could be used by authorities to support routes that perform less well.

1.3.10 It was outlined that a route of Voluntary Partnership Arrangement (VPA) arrangements could be pursued, on the basis of working as a partner with WoE to develop the BRT systems through early engagement. However, this may reflect the current market position in Bristol. It was noted that the WoE should work in partnership with the existing operator(s) to develop whole network, not just the 3 BRT routes and that WoE Authorities should engage with operators early on.

1.3.11 There was discussion about tendering for 3 to 5 years as a kick-start and, once there was certainty on patronage, then go to commercial operations. Therefore a procurement strategy that changes over time should be promoted with subsidies and financial support that reduces over time. This would assist with vehicle type wanted (i.e. Streetcar/Future of Travel, FTR), where operators need certainty for 5 years to support capital expenditure on vehicles. The view of the operators was that there could be a successful rapid transit approach based on a mix of articulated FTR type vehicles and high quality double deck buses, such as Enviro 400/500. These would be suitably branded in a consistent style.

1.3.12 Only one operator really wanted to go down a full tendered/franchise arrangement with exclusivity for everything to give certainty such that they would invest in the area.

1.3.13 None of the bus operators wanted to go down a Quality Contract route due to excessive and un-necessary control and likely protracted timescales for delivery. It was considered by the majority of operators that market drivers and working in partnership are best for customers. A similar engagement process is planned with contractors.

1.4 SUMMARY OF KEY ISSUES

1.4.1 The procurement strategy considers three main headings of infrastructure, operations and ITS. There are specific elements under these headings, but these have guided the development of the procurement strategy. Within these are key issues that the procurement strategy needs to address. Overarching key delivery issues are summarised in Table 1.12 below.

Delivery Issues	**How Addressed in Procurement Strategy**
Delivering scheme objectives	Procurement Strategy "locks-in" scheme objectives
Delivering to cost, specification and time	Procurement Strategy that takes best advantage of common programme and elements of work whilst reducing risks. Uses appropriate contract methods to secure quality infrastructure
Delivering Value for Money (VfM)	Procurement Strategy that maximises efficiencies and synergies across major scheme programmes to meet scheme objectives and provide VfM. The procurement strategy provides flexibility and scalability.
Providing the required level of service	Early engagement and partnership working arrangements with operators sharing common goals to provide quality services.
Delivering a commercial return	Effective packages of work that offer suitable scale whilst effectively tackling risk.
Achieving sufficient operational control – WoE ability to instigate and deliver operational changes	Effective governance structures linking delivery of infrastructure to ensuring appropriate bus service levels.
Differences between the three schemes in the nature of the rapid transit mechanisms.	Flexible procurement process to secure those best placed to manage and deliver works do so.

Table 1.2: How the Procurement Strategy tackles Delivery Issues

1.4.2 Key issues are split into strategic, where there are common themes across all schemes, and scheme specific issues. Strategic issues include:

- Achieving at least “revenue neutral” operations for the local authorities for bus services across the 3 rapid transit schemes;
- Controlling costs and managing risks;
- Ensuring cross boundary issues can be addressed through governance, design, construction, and operation;
- Ensuring consistent quality, ticketing and branding across the rapid transit network; and
- Meeting strategic and local objectives.

1.4.3 In addition there are a number of scheme specific issues summarised below in Table 1.3.

Heading	AVTM	NFH	SBL
Infrastructure	Delivery of a Guided Busway corridor. Sensitive bridge structures and railway crossing.	Delivering M32, railway and New Cut crossings, city centres works and Stoke Gifford Transport Link.	Delivering railway crossing. Timing in relation to AVTM and NFH for local “overlap”.
Operations	Transition for current Park & Ride service 903. Links to SBL services.	Part of route mirrors existing commercial services.	Links to AVTM and delivering new orbital services.

Table 1.3: Summary of Key Issues

1.5 OBJECTIVES (INFRASTRUCTURE, OPERATIONS AND TICKETING)

1.5.1 The main objectives of the three rapid transit schemes that the procurement strategy addresses include:

- Extend choice of transport modes for all, in particular for private car drivers, to encourage a shift to public transport;
- Promote sustainable development and regeneration by providing high quality public transport links;
- Improve access to public transport for areas that currently have poor provision;
- Improve integration of the public transport network;
- Promote social inclusion by improving access to employment, retail, community, leisure and educational facilities; and
- Improve safety along the corridors by reducing use of private cars.

1.5.2 The schemes also need to demonstrate Value for Money (VfM), which the joint procurement strategy can support by containing costs and reducing risks. The three rapid transit schemes all have excellent VfM, as follows:

- AVTM has an overall BCR of 6.20;
- NFH has an overall BCR of 3.60; and
- SBL has an overall BCR of 9.65.

Process

1.5.3 A Multi-funnel technique has been utilised to provide a process by which the optimum contract can be found for a procurement strategy using the tried and tested procurement paradigm. It has been used to assist in the selection of the most appropriate procurement strategy for the West of England Authority Rapid Transport Schemes. It provides an auditable route to selection, it informs contract drafting, it is suitable for reassigning risks at each project step and conforms to 'Achieving Excellence in Construction' and Gateway Review Process. With cost, quality and programme in mind a series of questions were asked of scheme promoters to build a profile of their expectations and determine what was important in terms of:

- Funding Issues;
- Total costs exceeding the budget;
- Timings and effects of delay;
- Non-negotiable issues; and
- Specific risks to address.

1.5.4 As part of the multi-funnel technique WSP has also used the Multi-Criteria Assessment Tool (MCAT) which has been developed as a way of appraising different procurement options against agreed cost, programme and quality criteria. The WSP MCAT has utilised strategic and scheme related objectives and involved a workshop exercise to score different procurement strategies for both operations and infrastructure against these objectives. The MCAT has been used as the first step in the process of determining a procurement strategy. It has narrowed down the procurement options and ensures that for whichever procurement strategy is chosen it will meet scheme objectives.

1.6 REVIEW OF EXISTING STRATEGY AND LESSONS LEARNT FROM OTHER BRT SCHEMES

1.6.1 As part of the Procurement Strategy a review of the existing AVTM draft procurement strategy has been undertaken together with bringing in the lessons learnt from other UK Bus Rapid Transit (BRT) schemes and the Greater Bristol Bus Network (GBBN) scheme currently being delivered.

Existing Strategy

1.6.2 The previous draft procurement strategy, building on the AVTM scheme, made good progress in developing procurement options and these are summarised below and shows the response within this strategy to take the procurement from the Expression of Interest stage to the BAFB submissions in readiness for delivery. Table *1.4* highlights the areas that have been addressed as the procurement options have developed.

Previous Procurement Strategy	WSP Procurement Strategy Response
Categorises work package types - Infrastructure, Hardware and Operator Services	Continues a consistent approach but considers stronger network wide linkages
Packaged approach using many differing procurement processes	Continues this approach.
No specific mention of Contract Types	Addressed in this procurement strategy
Consortium approach discounted and promotes joint approach with one	Package approach advocated with joint delivery and governance

authority lead	
Suggests Design and Build (D&B) approach for AVTM	Continues to be preferred approach
No summary of construction risks and sequencing risks	Included
Governance structures need to be identified	Clear governance included
No identification of supply chains and their involvement	This has been clarified
Discounts Quality Contract	Not supported by operators and timescales remain challenging to support this approach
Outline of ticketing strategy	Ticketing Strategy included
Outlines contractor engagement strategy	This is being carried out to test the market

Table 1.4: Review of Previous Procurement Strategy

Lessons Learnt

1.6.3 As part of the development of the procurement strategy we have considered processes for other schemes, including:

- Cambridgeshire Guided Busway (CGB)
- Luton Guided Busway;
- Edinburgh Tram;
- Greater Bristol Bus Network (GBBN) currently being built;
- SYPT Sheffield;
- Nottingham;
- West Midlands; and
- Gateshead.

1.6.4 Commentary on key schemes is included below, with a summary across all schemes included at the end of this section.

1.6.5 The outcome of the procurement process for the Cambridgeshire Guided Busway (CGB) Project is well documented. The project opened on 7th August 2011 and patronage is already well ahead of estimates. CGB started the process of feasibility in 2001 with the contract being awarded in July 2006 to BAM Nuttall. The total cost of the scheme was expected to be £116m with the construction element being £86m.

1.6.6 The County Council discussed early on with bus operators a commitment to a suitable level of services using the guideway. Officers have explored this with the four bus companies that have expressed an interest in running services on the guideway. The confidential discussions have involved the negotiation of legal agreements that provide a period of exclusive operation on the guideway for the first five years. In return operators are being asked to commit to providing services on the guideway, pay access charges and meet a minimum vehicle specification.

1.6.7 This is an innovative process that has involved the creation, negotiation and agreement of bespoke legal agreements that will be entered into by the County Council and the operators stemming from the TWAO powers. Discussions with the bus operators were positive and the main points of principle were agreed in advance. An iterative process to determine the minimum service levels has also been undertaken. This was extended however by detailed negotiation of the legal clauses, and some technical work that developed some of the mechanisms and procedures of operation on the guideway.

1.6.8 These agreements were put in place in advance of guideway opening. These agreements represent a significant financial commitment to the operators in terms of investment in new vehicles, running costs, and the access charges. They also represent a significant achievement for the County Council to have secured advance commitment to bus services on a project that has been procured but not yet constructed. Cambridgeshire undertook the following:

- Inception Agreement: to provide initial commitments by bus operators before County's commitment to build; and
- Access and Quality Agreement: to govern access to the Guided Busway, access charges and miscellaneous matters and to incorporate (i) a Quality Partnership Scheme to govern quality specification and timetabling and (ii) a Ticketing Scheme.

1.6.9 The CGB scheme was procured on the basis of The New Engineering Contract Option C Target Cost with a variation to cover the extended maintenance period as this was at the time considered to be the most appropriate form of contract for the detailed design and construction of the guided busway. Early Contractor Involvement (ECI) was used to engage the contractor in the detailed design and planning of the project. This was on the basis that the contractor was best placed to know the construction techniques most appropriate to delivering a quality scheme and that they could adapt the design accordingly. On a long narrow site with restricted access, logistics were considered to be critical. The contractor was thought to be able to plan logistics and construction methodologies in advance.

1.6.10 All civil engineering contracts, executed under seal, include latent damages for twelve years. The contractor is therefore liable for any significant faults arising as a result of any failure on their behalf for twelve years after completion. In practice this usually requires prolonged legal action, during which time the faults remain unresolved.

1.6.11 Under a conventional contract the contractor is liable for all defects arising during the first year as a result of construction and a proportion of the construction costs are retained and released at the end of the year, providing any defects have been rectified. This was considered not to guarantee to deliver the long-term reliability and ride quality required for the Guided Busway.

1.6.12 An extended defects liability period of ten years was therefore proposed, during which time the contractor would be responsible for rectifying defects in the construction. It was considered that this was long enough for any defects to come to light and to ensure a high quality of construction especially as the retention amount under the contract was 2.5% of the contract value. This would be released in annual instalments subject to continuing satisfactory performance of the guideway infrastructure.

1.6.13 If the final cost of constructing the works is more than the final target then the extra cost is shared between the contractor and client. In this case the client's share is reduced as the extra cost increases to an upper limit placing a cap on the client's share of any cost overrun. The formula proposed for the incentive shares sets this cap at 4.75% of the target. The maximum price of construction is therefore guaranteed to be no more than 4.75% above the final target price. The process for agreeing the target cost for CGB has been developed to meet the required timescales and to ensure that the best price is obtained. To this end a two stage tender process was used based on the EU Restricted Procedure for Public Works Contracts.

1.6.14 The two-stage process used for appointing the contractor permitted discussions to take place with the bidders to resolve potential risk issues that they identify during the first tendering stage.

1.6.15 The Cambridgeshire Guided Busway cost overrun was a symptom of how the type of contract worked with the contractor and cost and programme control, given there has been cost and programme overruns. This in part may have related to the relatively different nature of the project with regard to price versus project requirements, including possible areas of concern on contract management and cost control.

1.6.16 In respect of Edinburgh Tram it is potentially a similar issue to CGB of cost and programme disputes and whether there are agreed elements of additional work and changes to scope.

1.6.17 However, at this stage on both projects these are only outline views as it is not possible to provide further clarity or confirm this as further contract discussions are still taking place.

1.6.18 This WoE strategy is promoting use of the New Engineering Contract for infrastructure contracts, which when competently managed, has a well-defined mechanism for change control and managing risk. To avoid the outcomes from CGB there will be contract commercial support for all Task Order packages and Structures contracts.

Greater Bristol Bus Network (GBBN)

1.6.19 Overall the GBBN experience is a positive one with scheme elements being delivered successfully as part of an overall network.

1.6.20 The structuring of the works into a number of discrete work packages (or Task Orders) has been beneficial in that it allows greater public engagement. This enabled public engagement risks to be minimised. The GBBN project (like NFHP) is in effect a geographically diverse project. Undertaking works in work packages also enables lessons learnt from one works package procurement to be fed into the next without contractual problems.

1.6.21 Where other factors, such as new development infrastructure, arise during the project period, the works package approach allows work elements to be rescheduled without additional cost. When the Cycle City bid was successful, BCC were able to review GBBN schemes to maximise VfM through considering both projects together in the city centre, whilst at the same time dealing with critical stakeholder issues relating to cycle city which had the potential to spill over into GBBN. The residual risk to GBBN was delay, not contractual claims due to the work package approach.

1.6.22 The work package approach enables a number of different works packages, so enabling greater VfM and access to a wider resource base, although this is subject to effective management, which may need external assistance to the authorities.

1.6.23 Finally the works package approach is particularly suited to cross boundary schemes in allowing each authority to remain accountable (to the board and JTEC) for delivery in its area. The experience of GBBN indicates that there may be further opportunities to improve the procurement of RTPI and bus shelters in conjunction with a design handbook to sit alongside the programme handbook.

1.6.24 The programme management of GBBN also featured a strong emphasis on regular scrutiny of project costs facilitated by monthly, joint project management meetings and a robust change request process.

1.6.25 Therefore the GBBN provides an effective platform for successful delivery of the three rapid transit major schemes. Lessons learned from this project, particularly with regard to the setting of maximum fares and optimum frequencies can be applied to the RTS network.

Bus Operations Lessons

VOLUNTARY SCHEMES

1.6.21 The Sheffield Bus Agreement between Sheffield CC, SYPTE and First provides for a limited number of service changes, with an agreed congestion 'hotspots' programme of infrastructure and a range of Quality Improvements.

1.6.22 Although there has been a monitored increase in patronage across the scheme area (against a background decline), subsequent service and vehicle changes have eroded some of the original scheme objectives. This demonstrates a more robust means of securing partnership agreements will be necessary to protect the levels of investment involved in the WoE project.

1.6.23 In East Gateshead the partnership of Gateshead Council, Go North East and Nexus provided a voluntary scheme covering Fares & Ticketing, Service Quality and Consultation.

1.6.24 In the West Midlands the scheme included Area Based Improvements (North Walsall, South, East & West Birmingham) with revised networks and an overall Network West Midlands brand.

STATUTORY SCHEMES

1.6.25 Nottingham City Council focussed on the City Centre covering Infrastructure (and use of), Vehicle Quality, Driver Training and Emissions.

1.6.26 The North Sheffield 'Better Buses' was the first English QPS made by SYPTE and Sheffield City Council and covers a 10 year period from 2007. It covers service networks, infrastructure, service quality, vehicle emissions. In this case whilst services demonstrate resilience, network changes have amended the scheme. This has been followed by the Barnsley QPS with an Area wide approach focussed on the Town Centre.

1.6.27 Both the Barnsley and Nottingham examples have the benefits of a central area scheme that effectively captures the majority of services in the area because of the focus of bus services in the central area (most pass through or into the central area at one point of their route). This demonstrates that the scheme does not have to include all areas of the network, but should incorporate key sections in order to achieve maximum benefit.

1.6.28 The WoE authorities are currently progressing a QPS for each GBBN corridor to complement the infrastructure and vehicle investment, and setting down clear service standards. The first operational QPS, for the A367 corridor, is the first in Britain to specify maximum fares and minimum frequencies as facilitated by the 2008 Act. This experience provides a springboard for the QPS umbrella proposed for the rapid transit network.

Summary of Lessons Learnt

1.6.29 We understand that it is essential to put in place not only the most appropriate procurement strategy, but also to ensure that the mix and governance of the delivery team is effective to ensure construction and contract issues are resolved efficiently. In addition, it is essential that the procurement strategy and the contract(s) itself adequately take account of the nature of a BRT scheme, such as operations, land acquisition and third party interaction, (such as with Network Rail). Rapid transit schemes cannot be delivered along the same contract principles as traditional road schemes in all cases.

1.6.30 A summary of lessons learnt from the examples above and drawing on the experience of the Project Team is shown in Table 1.5.

Key Points/Issues	Lessons Learnt
Ability to deliver quality bus services	QPS principles using early engagement with operators to understand likely service levels early on. Quality Contracts not used but mix of QPS with selected tendering when necessary across a network as for GBBN.
Combining operations and maintenance in the construction tender process	Has not resulted in many tenderers proposing/pricing this option so maintenance carried out through existing Council methods/agreements and operations procured through bus operators separately
Target Price contract may raise final price issues if EWN not dealt with effectively during contract and construction.	Need effective contract management and governance across all rapid transit schemes and networks
ECI worked well	Contractors came up with innovative solutions for construction techniques Contractors have been less effective than authorities with discharge of planning conditions through design
Dealing with Network Rail and Highways Agency	Early discussions essential; if reliant on NR for delivery, greater attention needed to contract control and Value for Money.
Dispersed geographical locations for network scheme delivery	Packages of work are effective if well coordinated for design and construction management to ensure consistent quality. Packages of work are effective as long as they are well coordinated for design and construction management to ensure consistent quality.
Defects liability period	Possible to extend (such as for the guideway) to ensure quality

Table 1.5: Summary of Lessons Learnt

1.7 REPORT STRUCTURE

1.7.1 The structure of the remainder of this report is summarised below, and is in accordance with DfT “The Transport Business Case: Commercial Case “ Guidance for Major Scheme Bids:

Procurement Strategy – Commercial Case	DfT Guidance Description	Content
Chapter 1 – Introduction	Outline the approach taken to assess commercial viability	Scheme Review Scheme objectives and values and the context of better VFM through a combined strategy that links to Multi Criteria Assessment Tool (MCAT) Procurement Strategy locks in scheme benefits and minimises risks VFM summary (taken from the BAFB) Description and overview of reason why PFI and DBFO not considered appropriate. Outline 'Multi Funnel' process. Description regarding why Weston and Bath have not be included in the combined strategy. Description of prior procurement strategy on AVTM and brief synopses of that approach Why a joined up approach is now being considered Lessons learned from other BRT. Reference to Bus Service revenue strategy.
Chapter 2 – Outcomes and Outputs	Summarise the requirement in terms of outcomes and outputs, supplemented by full specification as an annex.	Each type of specification named and a description of the type of specifications provided for the following (some of the existing contract specs will be appended): **Design Brief:** Outline of how each design of each component is being dealt with. Some of the design will be part of a D&B package and some will be 'traditional'. **Detailed specifications:** NFHP (junctions and lane improvements), SBL (bus lanes and junction improvements) **Output specifications:** AVTM Guided Bus Infrastructure Ashton Swing Bridge Princes Street Bridge Portbury Freight line (Network Rail) Cycle/Pedestrian footbridge New cut bridge structure Stoke Gifford Transport Link over-bridge (Network Rail) SBL Rail under bridge (Network Rail) Signalling (combined) CCTV (combined) RTPI (combined) Ducting **Performance specifications:** Ticketing Description of the bus service operations Quality Partnership outline and tendered services specification. Context to existing term / contract arrangements – matrix summary Prepare a table of specs
Chapter 3 - Sourcing Options	Options for the provision of services to meet the business need e.g. partnerships, framework, existing supplier arrangements with rationale for selecting preferred sourcing option.	Detailed description of the preferred 'packaged' procurement strategy.: a mixture of new procurement and using existing and replacement contracts. Describe why D&B, traditional design and procurement can be used and their link to a possible 'Alliance Charter Approach'. Also describes how linkages such as Traffic

		Management, Utilities and Railway Possessions will be managed across the schemes. Description of current contracts and their thresholds, conditions and spend data to show that consideration has been given to their use and they can be used. Description of D&B infrastructure and structures contracts and whether there are synergies across the programme. States where synergies are and the case for combined contracts in terms of value, risk and timescales. Description of which contract conditions should be used. NEC3 conditions for construction contracts and other forms for hardware.
Chapter 4 - Procurement Strategy	Detailed procurement/purchasing options	Description of the Multi Funnel and technique using the Multi Criteria Assessment Toolkit. Outcomes who designs, what pricing mechanisms, who manages the construction site, who manages risk, what incentives need to be considered and which forms of contract? Describes how the programme, cost and quality sub-options were derived and the derivation of the weightings given to them against the considered procurement strategy options and why options were discounted. Managing expectations (Traffic Management) Overarching incentivisation Discussion of merging of term contracts with major scheme procurement – combine processes (longer period beyond WoE Schemes) Results of MCAT workshop.
Chapter 5 - Payment mechanisms	Set out the proposed payment mechanisms that will be negotiated with the providers e.g. linked to performance and availability, providing incentives for alternative revenue streams (OGC *Achieving Excellence* briefing for advice on payment mechanisms for construction contracts)	NEC3 Options A or C with modified clauses for D&B contracts. Explanation how this would work i.e. payment on completion of an activity for the design and works. Link to output specification will need to be clear. Need detail of existing contracts to see how the payment mechanisms work Link to possible 'Alliance' incentive mechanism. How it satisfies OGC
Chapter 6 - Pricing framework and charging mechanisms	Incentives, deductions and performance targets	Description of Manual of Contract Documents for Highway Works (MCHW) derivation of prices for some of the contracts - What the NEC3 Fee consists of and how the D&B Activity Schedules will be assessed for VFM. How existing contracts can be incentivised. Quality Partnership for operator services
Chapter 7 - Risk allocation and transfer	Assessment of how the types of risk may be apportioned or shared, with risks allocated to the party best places to manage them subject to achieving value for money.	Take main scheme risks and using NEC3 apportion any Employer risk through the contract and use the Z clause mechanisms for allocating Contractor risks How all other contracts will manage risk. Describes use of QRA and how it will/has apportioned risks.
Chapter 8 - Contract Length	Scenarios for contract length (with rationale) and proposed key contractual clauses.	Describe the lengths of the contracts for new procurement and existing contract in tabular format.
Chapter 9 - Human resource issues	Personnel/people management/trade union implications	Organogram of how 'packaged' contracts will be managed. .
Chapter 10 -	High level view of implementation	The combined procurement programme.

Contract Management	timescales. Detail additional support for in service management during roll out/closure. Set out arrangement's for managing contract through project/service delivery	Detail how PDO will manage new and existing projects – Role of PDO, SRO's and Procurement in each of the WoE LA's – describing how will risks and interfaces will be managed. Explain how the contracts will be linked and role of high level board.
Chapter 11- Funding Strategy	Outline Funding Strategy setting out cashflow linked to delivery as part of the procurement strategy and providing value for money	Review of extent of existing funding identified and optimise delivery strategy to maximise cash flow / value for money; Consider additional sources of finance/contributions.

2 Outcomes and Outputs

2.1 DESIGN BRIEF

2.1.1 There will be a combination of detailed design carried out by the design resource described in 2.2. However for the D&B strategies it is the choice of the main contractor as to who carries out the design under a sub contract arrangement.

2.2 DETAILED SPECIFICATIONS

2.2.1 These will be provided for the on street and junction works for the bus corridor works across all the schemes. They will be drawn up by a combination of shared authority internal designers from Bristol City Council, North Somerset and South Gloucestershire and supplemented by the Regional Improvement and Efficiency Programme (RIEP) major project framework and the new BCC design framework for improvement works.

2.3 OUTPUT SPECIFICATIONS

2.3.1 The Output Specifications will concentrate on what is required rather than how it is to be delivered. The following infrastructure and structures will be specified in this way:

- AVTM Guided Bus Infrastructure
- Ashton Swing Bridge
- Prince Street Bridge
- Portbury Freight line (Network Rail)
- AVTM Cycle/Pedestrian footbridge
- New Cut bridge structure
- Stoke Gifford Transport Link over-bridge (Network Rail)
- SBL Rail under-bridge (Network Rail)
- Signalling (combined)
- CCTV (combined)
- RTPI (combined)

2.4 PERFORMANCE SPECIFICATIONS

Bus Operations

2.4.1 The procurement strategy for the bus operations will reflect the nature of the three Rapid Transit Schemes taking a combined network approach. It will also build on the GBBN scheme currently underway to create an umbrella strategy for the area.

2.4.2 The strategy will place a degree of control with the local authorities whilst making sure the bus operators, who are best placed to deliver bus services, provide suitable levels of quality. With this in mind a Quality Partnership Scheme (QPS) would be made under legislation included within the Local Transport Act 2008. The QPS that provides for the following:

- Network Branding – to ensure consistent rapid transit branding across all three rapid transit routes;
- Maximum Fares – to ensure fares levels are attractive to passengers (when compared with other travel options) and meet local aspirations for make public transport accessible to all sectors of the community; ;
- Vehicle Quality – to ensure scheme objectives are met and high standards are consistently provided by bus operators;
- Driver Training – to ensure the image and nature of the rapid transit scheme objectives are transmitted onto users and new technology and route guidance are safely used;
- Infrastructure Control – to ensure bus services of the appropriate quality have dedicated access to infrastructure, which is maintained to an agreed standard; and
- Integration between RTS services and other parts of the network in terms of ticketing, network connectivity, information and accessibility.

2.4.3 The QPS underpinned by individual operator agreements will cover commercial and tendered bus services and is enforceable by the Traffic Commissioner through bus service and operator licensing legislation.

2.4.4 Whilst the local authorities are contributing £83m towards the £197m cost of the three Rapid Transit Schemes it will be challenging to achieve complete levels of control across all three schemes as this would require a Quality Contract. This is untested and has significant risks for delivery and cost for the local authorities and operators involved, therefore the recommended approach is to provide a mixture of procurement routes that deliver an integrated Rapid Transit network but that suit the differing nature of the three rapid transit schemes. For example, using tendered services with infrastructure access control on AVTM, and tendered services plus commercial services under a QPS across the Rapid Transit network.

2.4.5 Bus services will be tendered by the relevant local transport authority to cover areas where bus operators would not provide commercial services or to improve services outside of core hours (evening and weekend services for example). These could be on a fixed gross cost contract basis with ‘on bus’ revenue being returned to the authorities, such as for AVTM. It may be possible to introduce some services on a minimum subsidy basis, allowing the operators to keep all the fare revenue but this may prove difficult to introduce, at least in the short-term due to insufficient data availability from new services or captured from contracted services.

2.4.6 The QPS would also link to the ticketing scheme outlined in the ticketing strategy below.

Ticketing

2.4.7 The Ticketing Strategy is in line with DfT guidance and policy by seeking to build upon existing ITSO ticketing architecture via the sub-regional technological platform Host Operator or Processing System (HOPS) and Card Management System (CMS) already supported by all of the commercial and tendered service operators of the West of England. The Strategy is based upon enhancing existing functionality rather than introducing a new ticketing platform. This carries less risk, is more affordable and is more flexible. The authorities will continue to work closely with DfT and South West Smart Applications Ltd (SWSAL) to ensure that the strategy builds upon wider initiatives and embraces the latest smartcard developments.

2.4.8 For the Ticketing Strategy:

- A sub-regional ITSO HOPS & CMS Platform;
- An Online ITSO Ticketing Retail Function – based on ITSO Ticketing & E-Money;
- An Online Customer Transaction Management Function;
- A Back Office Card Based (euro Pay, Mastercard, Visa - EMV) Data Transaction Management Platform for supported routes;
- An On-street ITSO Retail POST solution at up to 13 core locations;
- An On-street ITSO/EMV Reader at up to 80 bus stops;
- An On-bus ITSO/EMV POST solution on supported routes; and
- An On-bus ITSO POST solution on all vehicles utilising Major Scheme infrastructure.

3 Sourcing Options

3.1 INTRODUCTION

3.1.1 The individual schemes are subject to the Public Contract Regulations 2006, EU Directive 2004/18/EC. This means that selection of consultants, contractors and goods are subject to the procurement rules covered by these regulations. The projects fall under the Services, Works and Goods Directives which mean that all the services, works and goods purchased for the design, construction and maintenance of the projects must be either procured using these directives or sourced from contracts which have been procured through the Regulations. These procurements will have stated that the type of services, works and good that can be called off the total expected value of the services, works and goods is not exceeded against the value stated on the Contract Notice for that particular contract. The sourcing strategy is a packaged approach across all the schemes linking them with an incentivised Alliance Charter schedule which will group the client and all suppliers into one 'partnership' responsible for the delivery of the Rapid Transit Schemes.

3.1.2 The total value of all the services, works and goods is significantly over the Services and Works Directive threshold. Contract notice(s) will need to be advertised in the Official Journal of the European Union (OJEU) for new contracts. This strategy is recommending that most if not all new procurements will be carried out under the Restricted Procedure, which will use a prequalification stage to filter out suitable contractors and a tendering stage where the successful contractors' will be invited to submit a tender. The existing contracts which were awarded under OJEU will be available to award so long as their capacity allows.

3.1.3 The proposed sourcing options are taking into account the combined programme synergies of the three Rapid Transit Schemes. The detailed design services which will be used for the packages of work on NFHP, SBL and AVTM city centre loop will utilise existing frameworks available to the West of England Authority such as the Regional Improvement and Efficiency Programme (RIEP) framework, for design services and contractor services and will be shared across authorities for example the Bristol Design Service department will be utilised on NFHP, SBL to design and use a detailed specification when letting works for the packages of work.

3.1.4 The overall approach will enable a packaged group of Structures contracts for new and refurbishment of bridges across the three schemes to be let thus achieving benefits of scale and administration savings. The utilisation of existing and future replacement frameworks across the three authorities will help the work to be packaged and let in a phased manner.

3.1.5 There are two major 'third party' interests across the packages; these are Network Rail (three bridges) and the Highways Agency (one new junction).

3.2 DESCRIPTION OF THE PREFERRED 'PACKAGED' PROCUREMENT STRATEGY

3.2.1 This section will not revisit the detail of the elements in the original Programme Entry submissions, but will summarise the requirements for each scheme element under the heading infrastructure, hardware and services.

3.2.2 Tables 1.7 and 1.8 describe where appropriate packages of work can be combined. For example where there are cross synergies between schemes these are shown as 'not being greyed out' and form a package.

3.2.3 On NFHP the strategy is to use established contracts that are used for the current 'Streetcare' provision which provides highways maintenance and capital refurbishment for South Gloucestershire. These contracts were awarded under the Public Contract Regulations in 2010 and are available potentially until 2017. Indications are that there could be a risk that OJEU contract thresholds could be exceeded and the Authoritiy could be subject to a challenge. The proposal is therefore to supplement this contract through one of the local authorities with establishment of Framework Agreements and Contracts which would enable packages of works to be selected through run mini-tendering exercises like the RIEP model prior to award.

3.2.4 Other contracts including specialist surfacing, traffic management and 'blue collar' labour are available to be used. The strategy is to utilise the supervisory skills of council employees and also use direct labour where applicable and supplement these resources were needed. This will of course be subject to strong governance and management as shown in section 9.

3.2.5 For the new M32 bus-only junctions on the NFHP scheme, the package strategy is to work with the Highways Agency (HA) to design and construct so they can manage the risks on the motorway section and let a contract through their Asset Support Contract (ASC). A collaborative agreement or an understanding that the HA contracts can be 'called off from' and managed by the HA project delivery function on behalf of WoE authorities is an option. Alternatives include a collaborative agreement which would describe the parties' contractual responsibilities. The onus would be on the HA to design and procure the works and to manage this in accordance with the agreement which will need some clear unambiguous words about guaranteed prices and cost escalation.

3.2.6 There is ongoing dialogue with Network Rail regarding procurement options for the rail structures. These will be agreed before Spring 2012. The strategy for the Stoke Gifford Transport Link over-bridge is well-developed and may run in parallel with that for the other rail structures.

3.2.7 The AVTM and NFHP City Centre works have clear programme and geography synergy, for this reason these works form a package. The current BCC contracts will have expired before construction is due to start and this strategy is supporting a consolidation of the existing highways maintenance and capital works contract into one new Term Service Contract which will be able to deal with this size of package. The new contract will be incentivised and contain rewards for good performance and penalties for poor performance.

3.2.8 There are synergies between the SBL and the NFHP in South Bristol in terms of geographical location. The new BCC term contract(s) would be used and there is opportunity to procure replacement contracts. The existing contracts expire by the time the construction starts on site. The replacement procurement should be completed through OJEU with the contract being very specific to the requirements for the City Centre works, the SBL sections 1 to 14 and the NFHP South Bristol sections.

3.2.9 The guided infrastructure works package in AVTM is a Design and Build package but with a recognition that the design is well developed and will inform the tender documentation giving greater cost certainty and a shorter delivery programme. The appointed contractor can work closely with his designer and input into buildability. At an estimate of around £10 million this is also a significant amount and will attract a lot of interest from the supply chain.

3.2.10 Bus shelters will need to be provided on a supply and install basis. The current contract that is available to all of the WoE authorities but does not include for a range of shelter design and other components such as real time public information (RTPI) and ticketing infrastructure. Building on best practice the replacement contract will incorporate a facility to install RTPI and ticketing systems.

3.2.11 The refurbishment of Ashton Avenue Swing bridge is deemed to be specialist and has the potential to dictate the phasing and timing of the guided corridor. This is a specialist piece of engineering refurbishment and should best be carried out by a specialist contractor and as such the refurbishment package should sit in the package described below.

3.2.12 The Avon New Cut and Princes Street bridge both involve river crossings and therefore sit naturally together in one package and as well as the other structures in AVTM and SBL and as such a good value package of £10 million will provide the supply chain with a substantial package where the contractor will be able to programme the works and if not constrained he has the opportunity to programme efficiencies.

3.2.13 The structuring of the works into a number of discrete work packages (or Task Orders) will be beneficial in that it allows greater public engagement. The schemes are geographically diverse and any consultation on proposals at the start of the project could need revisiting for elements which are not delivered for two to three years. In general, the public are most concerned about how the proposals impact on their own street and to them personally.

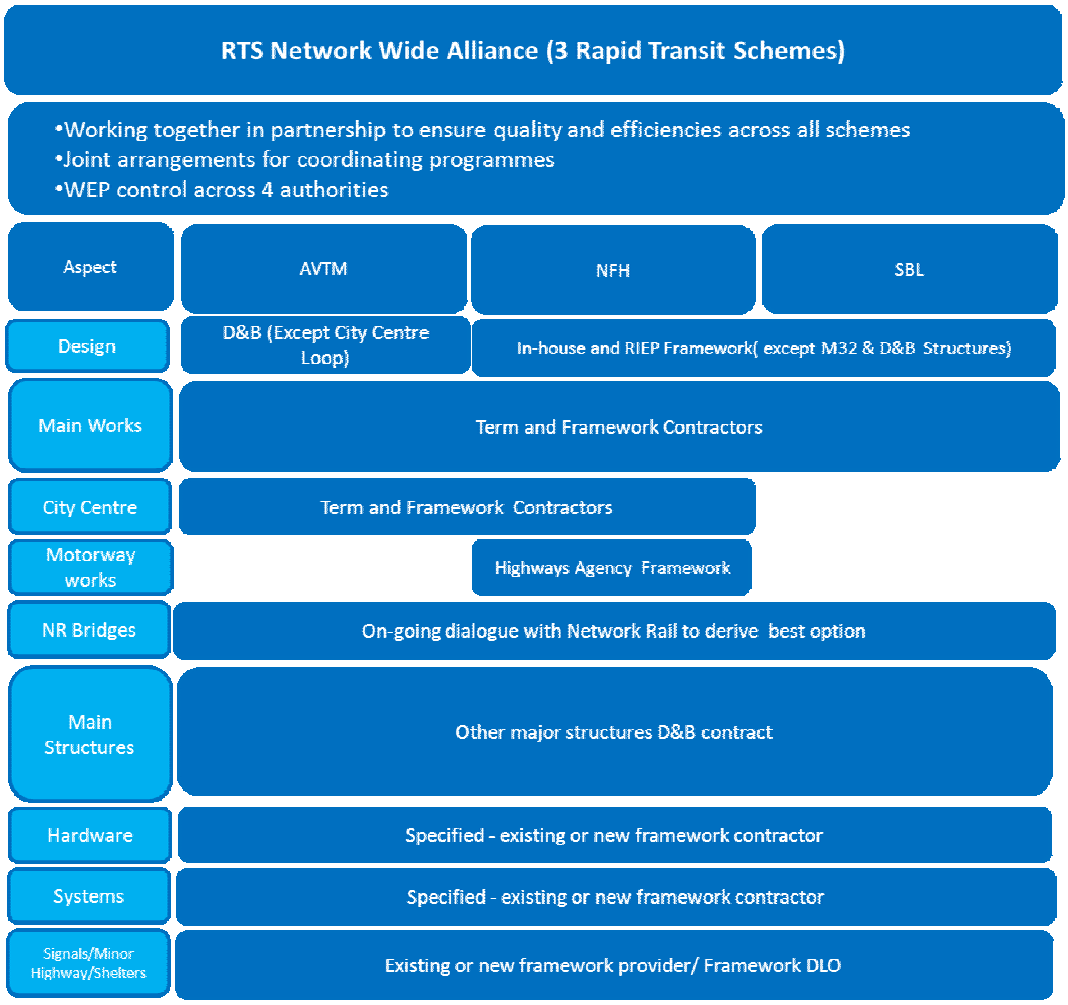
3.2.14 The hardware requirements which include Signals, RTPI, CCTV, ITS infrastructure and other system infrastructure will be supplied from existing and replacement contracts which have been procured in the past by BCC and this strategy will continue with that authority taking the lead on the procurement of new contracts. There is an opportunity to seek greater alignment with the new works and the replacement contracts will include performance incentives and transparent pricing mechanisms to ensure the value for money objective of this scheme.

3.2.15 These contracts will be supply and installation packages and will need to be coordinated by the relevant Package Delivery Manager. These are framework contracts with more than one supplier on them and consideration for secondary competition must be considered in accordance with the new Public Contract Regulations 2006 when drawing up the framework information.

Infrastructure

3.2.16 The procurement strategy for infrastructure is set out below.

Infrastructure Procurement Strategy



3.2.17 In terms of design the procurement process will pick up cross-boundary coordination to provide joint authority project teams using the flexibility of in-house resource.

Bus Operations

3.2.18 The nature of the infrastructure, both geographically and the type and degree of segregation together with the extent of existing bus services plays a key role in determining an effective bus operations procurement strategy. Therefore the strategy needs to reflect the most effective and efficient way to deliver quality rapid transit services to meet the programme.

3.2.19 The WoE local authorities need a degree of control/influence over service levels and quality; perhaps more than the bus operators would prefer, but justified when considering the amount of public sector investment.

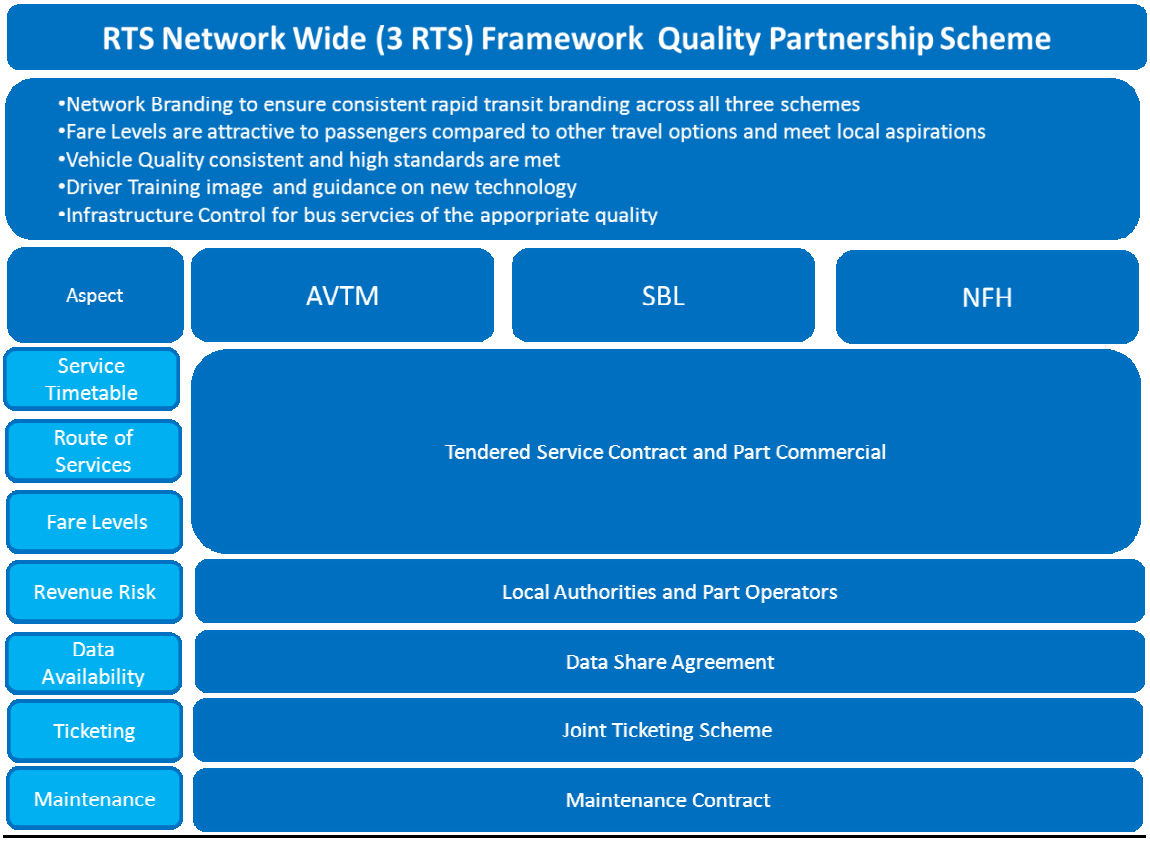
3.2.20 Local Authorities are seeking to ensure that no financial burden is placed on the tax payer, so the use of fixed gross cost tendering for certain services is possible. It should also be noted that the Transport Act 2008 allows some degree of “top-up” tendered services on commercial routes and this could be considered for NFHP routes.

3.2.21 The procurement strategy for the bus operations will reflect the nature of the three rapid transit schemes and the combined network approach. It will also build on the GBBN QPSs currently underway to create an umbrella strategy for the West of England area.

3.2.22 The strategy will place a degree of control with the local authority whilst making sure the bus operators, who are best placed to deliver bus services, provide suitable levels of quality. With this in mind a Quality Partnership Scheme (QPS) is proposed across the Rapid Transit network; as AVTM is not public highway in the main, levels of local authority control would be greater.

3.2.23 The Draft overall strategy is set out below.

Rapid Transit Operations Procurement Strategy



3.2.24 Co-ordination of the 'making' of the QPS would be managed through the Programme Delivery Board and appropriate lead authority; Bristol CC may be best-placed to take this role, on the basis that it is likely that the majority of services will operate to / from and through Bristol City Centre.

3.2.25 The reasoning behind the choice of strategy is set out in Table *1.6* below.

Operations Strategy	**Reasoning**
Quality Partnership Scheme (QPS)	Apply network wide to control branding, vehicle quality, infrastructure use, max fares etc to give LA's control over areas of public interface. Will deliver quality services in accordance with scheme programmes. It builds on the existing GBBN QPSs. Seeks an integrated rapid transit network.
Tendered Services	Specify all service requirements (similar to existing 903) Less revenue risk from AVTM (including with SBL added)
Voluntary Agreements (VPA) on NFH and Tendered Services where required	Possibly on existing commercial routes in the NFH scheme to avoid challenge and manage potential delivery risks. Mix of existing commercial and tendered services delivers the overall service levels necessary for rapid transit
TRO control of on-street infrastructure	Possible option to control new quality infrastructure linked to Operator Licence via TRO

Table 1.6: Operations Strategy

3.2.26 A key consideration is vehicle type, specification and quality standards, as these costs, borne by the operators, could impact on fares and revenues and operational viability. Where appropriate the procurement strategy provides a degree of certainty and flexibility to operators to assist with ensuring these likely costs can be covered by providing certainty and stability over a longer period of time. Further work will be carried out with key stakeholders and bus operators, to agree vehicle types and to ensure quality and a consistent Rapid Transit Brand image.

3.2.27 Early engagement is clearly the key, setting out exactly what stakeholders want and to seek partnership working with operators.

Ticketing

3.2.28 The Major Scheme partners already have in place a Smartcard Management Board, comprised of the Heads of Transport of all of the Major Scheme partner authorities. This Board was formed in 2009 and meets on a monthly basis. It is complemented by a Smartcard Management Team, comprised of Officers from each authority, who undertake the delivery activities. This also meets monthly and reports back to the Management Board.

3.2.29 The Smartcard Management Board has already established operational frameworks with the local bus operators for rolling out and managing ITSO interoperable ticketing for the Major Scheme areas. The Board has:

- Established management processes for procurement;
- Established individual contracts with all local bus operators;
- Maintains a Risk Register of HOPS/CMS Provision, Smart Ticketing Roll-out and Operation;
- Maintains a costed and approved Budget Plan for HOPS/CMS provision and Smart Ticketing; and
- Maintains a Programme Plan for its Smart system delivery and innovation.

3.2.30 Central to the Ticketing Strategy sourcing options is to build upon an existing set of individual contracts between the local authority and the 21 local bus operators, where a set of published rules associated with varying support levels for on bus ITSO POST roll out, and back office software support and operation are defined. A copy of these rules is attached as an annex in Appendix F.

3.2.31 This process has established and maintains a direct relationship with every local bus operator in relation to ITSO based Ticketing Products, which will be built upon as the rapid transit roll-out progresses. These contracts are further supported by a committed change to the Tendered Bus Service provision rules to be applied by each of the West of England local authority partners by the summer of 2012. Each local authority has committed itself to requiring a fully operational ITSO POST to be in place for all of its tendered service contracts.

3.2.32 These actions and contracts as outlined provide the core of an area wide ITSO environment with the public and commercial sectors engaged in a mutually beneficial partnership arrangement delivering a stable platform, upon which enhancements can be developed and sourced for the rapid transit. It is the Smartcard Management Board, working with the Rapid Transit SRO, which will deliver the Ticketing Strategy for the rapid transit, including additional sourcing as outlined.

Maintenance

3.2.33 The maintenance of the infrastructure will be carried out by the authorities, supported with new and current term highways contracts. The specific requirements for the guided corridor works will be a requirement in the specification for the new BCC term and framework contracts. The existing contracts in South Gloucestershire will need to be amended to account for specific changes in the specification, as a result of the bus priority highway improvements. As well as the physical requirements, for the guideway sections, there will need to be a vehicle recovery provision written into the contracts with a call out facility which corresponds to route timings. The winter service scheduling with the separate WoE authorities will also need to be adjusted to allow for spreading frequencies for the new segregated guided corridor and the new bus priority highway works.

3.3 CONTRACT 'PACKAGES' CONSULTANCY AND CONSTRUCTION

3.3.1 The Consultancy Packages of work are shown in Table1.7.

NFHP	AVTM	SBL	CONSULTANCY STRATEGY	CONDITIONS
Infrastructure using new and existing contracts			Design: S Glos plus support from BCC Design team and new BCC design framework PM: Halcrow from RIEP framework	NEC3 PSC Option A and E
Infrastructure City Centre	Infrastructure City Centre Loop		Design: BCC Design team and new BCC design framework PM: Halcrow from RIEP framework	NEC3 PSC Option A and E
Infrastructure South Bristol Packages		Section 1 to 14 Infrastructure	Design: BCC Design team and new BCC design framework PM: Motts from RIEP framework	NEC3 PSC Option A and E
Guided Corridor and Stadium Works			Design:RIEP Framework-Halcrow PM: SDG	NEC3 PSC Option A and E
St John Lane Road Bridge			Design:RIEP Framework- PM: RIEP Framework	NEC3 PSC Option A and E
Avon New Cut	Vauxhall Bridge, Cumberland Road Bridge, Princes Street inc Stadium section Ashton Avenue Swing Bridge Refurbishment	Various Structures £3m	Design:RIEP Framework- PM: RIEP Framework	NEC3 PSC Option A and E

Table1.7: Consultancy Contract Packages

3.3.2 The Infrastructure Packages of work are shown in Table1.8.

NFHP	AVTM	SBL	STRATEGY	CONDITIONS
Infrastructure				
Cribbs Causeway and Aztec West £300k Bradley Stoke Way and Parkway Station 1 of 2 Bradley Stoke Way and Parkway Station 2 of 2 Stoke Gifford Transport Link and Coldharbour Lane East Fringe			S Glos Streetcare contracts and supplemented by New term maintenance contractor	NEC3 – ECC TSC Option C Arrangements
M32 Summary £5.4m			Highways Agency	NEC3 Bespoke
City Centre	City Centre Loop		S Glos 'Streetcare' and BCC replacement term maintenance contract	NEC3 TSC Option A
South Bristol 1 of 2 South Bristol 2 of 2		Section 1 to 14 (Hengrove Park in particular) £13m	New BCC term maintenance contractor, new contract heavily geared to city centre and SBL works Package across schemes	ICE current, New TSC Option C
	Guided Corridor infrastructure and Stadium works		New procurement of D&B package	NEC 3 ECC Option C
Bus shelters (part of infrastructure)				
All schemes will use new contract for supply and installation of bus shelters.			Current BCC contract will have expired. New procurement will be required	New contract will use NEC3 option Exceeds OJEU limit
Structures				
Network Rail Stoke Gifford Railway Bdge	Portishead Railway Bridge	Railway Underbridge	Network Rail package management contract through a Collaborative Agreement or separately let package managed by NR liaison manager.	Network Rail bespoke D&B or D&B.
M32 Access			Highways Agency Asset Support Contract (ASC)	HA bespoke based on NEC3
Avon New Cut	Vauxhall Bridge, Cumberland Road Bridge, Princes Street inc Stadium section. Ashton Avenue Swing Bridge Refurb £4.1m	Various Structures £750k	New Procurement D&B Package across schemes	NEC 3 ECC Option A
Hardware				
Signaling	Signaling	Signaling	Current contract with Siemans expires before construction starts. New contract	New contract will use NEC3 Exceeds OJEU limit
RTPI			ACIS	
CCTV			Use Select Electronics and replacement.	
Ticketing			SWASL	

Table1.8: Infrastructure Contract Packages

3.3.3 Most if not all new procurements will be carried out under the Restricted Procedure, which will use a prequalification stage to filter out suitable contractors and a tendering stage where the successful contractors' will be invited to submit a tender.

3.3.4 The pre-qualification stage will filter out applicants who do not have the requisite financial standing and insurances, an inadequate health and safety track record and poor quality control, limited experience in similar schemes, and poor environmental controls.

3.3.5 The tendering stages will typically consist of a two-envelope bid system. The tenders will be assessed in line with the 'MEAT' assessment criteria, (the Most Economically Advantageous Tender) through a series of quality questions which will allow tenderers to demonstrate ability in some key areas, linked to the main project risks. Some of the responses would be in the form of method statements, which would be derived specifically for the contract. The following would be typical areas to evaluate:

- Management team structure and controlling of costs;
- Site management and quality systems;
- Managing environmental constraints and archaeological constraints;
- Selection and management of the supply chain;
- Experience of managing a lump sum and target price in a D&B contract;
- Interfaces with other utility sub-contractors and stakeholders; and
- Approach to managing delays to the programme.

3.3.6 The second part of the tenders will consist of the financial bids. Contractors will provide activity schedules and prices in the tender. They will use the method of measurement, the works information and the drawings to do this. A financial assessment panel will assess this separately. Marks will be allocated relative to the cheapest bid using standard WoE local authority procurement practices.

3.3.7 A quality financial split of 60:40 would be consistent with the OGC's recommendations for the size and complexity of these schemes. A quality price evaluation model will be prepared in advance of issuing the tenders; it will determine the marking criteria for the quality questions; describe how the overall marks will be allocated and how the final ranking of applicants is determined. The quality evaluation will be assessed by a quality board. If applicants cannot be split, a further stage of presentations and interviews may be used. Responses to the quality questions will be awarded marks based on a pre- determined scoring matrix.

3.4 DESCRIPTION OF CURRENT CONTRACTS

3.4.1 There are four local authorities across the West of England Authority which have their own contract arrangements for highways work, technology and quality partnerships. These contracts are generally in the form of frameworks and supply and installation of hardware and infrastructure products such as bus shelters and traffic signals. Although they are of varying duration and coverage, a number are shared and/or available to more than one authority.

3.4.2 The majority of contracts let by three authorities will be expired by 2013 except the ones let to service the 'Streetcare' provision in South Gloucestershire which expire in 2017 and the Bristol City Council Highway Maintenance of Minor improvements core contract which expires in 2015.

3.4.3 Summary of frameworks and term contracts are included in Table1.9.

Title	Contractors	Term	Replacement Contract
Bristol City Council			
Traffic Signals Maintenance &Installation	Siemens	Expires March 2013	Yes and will be required for the procurement strategy for all three schemes
Framework Agreement for Minor Highways & Associated Works	Several	Expires 31 March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Surfacing	CEMEX	Expires March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Specialist surface Treatments	HMS Ltd Prismo	Expires March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Road Markings	Kelly Brothers	Expires March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Temporary Traffic Manangement	Forest	Expires March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Highway Maintenance & Minor Improvements	Carillion, ETM, Alun Griffiths & others	Expires March 2012	No
Maintenance of road lighting	SEC	Expires 2015	No
Highway Maintenance & Minor Improvements Core Contract	Carillion	Expires 2015	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
Surface Dressing	South Gloucs	Expires March 2012	Yes and will be required for the AVTM procurement strategy City Centre Loop and SBL Sections 1-14
South Gloucestershire			
Surfacing and quarried materials	Lafarge	Expires 2017 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop
Footway Slurry Seal	Eurovia	Expires 2017 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop
Specialist Surfacing inc Micro, HFS, Coloured	Eurovia	Expires 2017 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop

Traffic Management	Forest	Expires 2017 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop
Sign Manufacture	Carillion	Expires 2017 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop
Labour and gang Framework	Various	Expires 2015 with 2 year extension	Yes and will be required for the NFHP procurement strategy and AVTM City Centre Loop
North Somerset			
Traffic signals & ITS Installation and Maintenance Work	Siemens	Expires March 2013	Yes and will be required for the procurement strategy for all three schemes
Term Contract for Transport Consultancy Services	Halcrow	Expires Sept 2014	Yes for PM of SBL sections 1-14
Framework Agreement for Minor Highways & Associated Works		Expires 31 March 2012	Yes and will be required for the procurement strategy for parts of SBL
Highway Maintenance & Improvement Works	Balfour Beatty	Expires 31 March 2014	Yes and will be required for the procurement strategy for parts of SBL
CCTV - Maintenance only	Select Electrics	Expires March 2012	Combined with other Authorities
Street Lighting Traffic Management Decorative Lighting Maintenance Contract	Scottish & Southern Electric	Expires 2018 with all the extensions applied.	No

Table1.9: Current Contracts

3.5 DESCRIPTION OF PROPOSED CONTRACTING ARRANGEMENTS

Infrastructure

3.5.1 The packaged approach is a mix of new procurement and the use of existing contracts. However this strategy shows that apart from the contracts in South Gloucester the majority of the contracts will be renewed which gives the schemes greater scope to specify and shape the requirements of the new contracts. The analysis described in the next main section describes how the procurement strategy was derived and how a packaged approach has developed across the schemes. This sub section describes what the arrangements will consist of.

3.5.2 This strategy is promoting a packaged approach with an overarching Alliance Charter. An Alliance Charter is a form of incentive which enables all the parties to sign up to an overarching agreement whereby all delivery parties sign up to a common approach for the design, construction and implementation of the Rapid Transit schemes. This strategy will include an Alliance Board to promote common performance measures across each package of work and contract. A member from each contracting body will attend a board where progress, common problems, interfaces and performance will be discussed.

3.5.3 The proposed set of Alliance Charter measures and behaviors will consist of but not be limited to the following:

- Consultants and contractors management team and key people;
- Delivery Programmes;
- Common Incentives;
- Key Performance Indicators;
- Penalties and rewards;
- Resolution of disputes; and
- Lessons learned.

3.5.4 The majority of the infrastructure contracts will be NEC3 and will consist in most cases of recent term contracts which will have been tendered or retendered on their expiry. These existing contracts and their renewals for the contracts which have a wider remit i.e. they are used by the operating authorities for other contracts, have a specification or Service Information and a Price List. When the contracts are used a Task Order or Works Order will be issued detailing the works required. A Price List will have been tendered and agreed when the contracts were formed. This means for the majority of the junction and lane improvements in NFHP, AVTM City Centre Loop and SBL Section 1 to 14, the prices for the activities are taken from the contracted Price List. The Prices are lump sums and include for profit and overhead and will in most cases be rate items. A schedule of rates option exists within the Price list and will be used for smaller works and emergency works. There will be a mechanism to agree nonstandard prices as compensation events under the contract. There should be no surprises and the works provided will be in line with those contracts. The value of work expected to be derived from existing or new replacement contracts is £30m. The existing and new contracts will be brought into the Alliance and they will be 'over acrchingly' managed by a representative from the Programme Delivery Board.

3.5.5 In a D&B contract a single contractor acts as the sole point of responsibility to a client for the design, management and delivery of a project, on time, within budget and usually in accordance with a performance specification. A project manager will be appointed by the client and this strategy is promoting to use a WoE, RIEP consultant to support all the projects as NEC3 Engineering and Construction project manager. The Consultant Supervisor can either be a function of the D&B Contractor where it becomes self certification or it can be supplied by the Client. This strategy is proposing to use an ECC supervisor from WoE RIEP Major Transport Framework contract.

3.5.6 The D&B schemes will be let as performance specifications. The Contractor will be taking on the responsibility of the design and up front liaison activities. The extent of how much scheme development work will be stated in each performance specification for each D&B package. The Risk Registers for each of the proposed packages will be also form part of the D&B contracts. This is important as the Contractors' tendering need to assess all the risk as they will be pricing for it. All available scheme development data will be made available during tendering ain a 'Data room'. All of the proposed structures are proposed to be let under NEC3 ECC Option A. The tender will be structured so that the tenderers still have to price an Activity Schedule and the breakdown of these costs will be made available. The Cost control support will assess the tenderers for value for money. Cost control support will be taken from the RIEP framework contract.

3.5.7 The D&B advanced design development package for the Guided Corridor and stadium works will be tendered and let as a D&B NEC3 ECC Option C Target contract with Activity Schedule. The reason for this approach is that the Guided corridor has a major issue over performance of the guided bus way. The Target contract encourages joint management of risk and mutual problem solving. There is scope to jointly manage risks such as the proposed delivery of the offsite precast guided units by river and the heritage railway infrastructure.

Ticketing

3.5.8 The Ticketing Strategy is based around:

- Enhancing an existing ITSO HOPS and CMS contract, procured via OJEU in 2010 by one of the Major Scheme local authority partners;
  - This existing contract, with Applied Card Technologies Ltd, hosted by South Gloucestershire Council allows for the development of the Ticketing Strategy as outlined, including e-purse activities; and Web Portal interface for Rapid Transit Service routes. A copy of the Contract specification is available if required.
- Utilising an OJEU procured On-Bus POST Framework Contract funded by the Major Scheme partners in 2011 for the additional On-Bus POSTS as required;
  - This Framework Contract (Lot 2), jointly resourced by the Major Scheme local authority partners and South West Smart Applications Ltd (SWSAL) - a not for profit company established to support the roll out of Smart Ticketing in SW England; allows for the procurement of any additional ITSO POSTs for the new vehicles where required. A copy of the Framework Contract is available if required.
- Utilising an OJEU procured Retail POST Framework Contract funded by the Major Scheme partners in 2011 for the 13 On-Street Retail POSTS as required;
  - This Framework Contract (Lot 5), jointly resourced by the Major Scheme local authority partners and South West Smart Applications Ltd (SWSAL) - a not for profit company established to support the roll out of Smart Ticketing in SW England; allows for the procurement of Retail ITSO POSTs for the Interchange locations required. A copy of the Framework Contract is available if required.
- Procuring through standard LA practices the necessary EMV support platform.
  - This has two elements:

    1) the EMV Back Office – to be procured through negotiation either with existing operator in the Major Scheme area; or with Transport for London in line with initial early discussions; or through a competitive tender process (threshold and de-minimus level dependent). The final route is likely to be influenced by the Rapid Transit Vehicle service operator.

    2) The ITSO / EMV Reader at Bus Stops – to be procured through competitive tender.

Operations

3.5.9 The bus operations contracting arrangements are described in Table *1.10*. These are based on the overarching network wide QPS to control quality and branding.

Service Operations Procurement	Method of achieving Quality Standards	Rationale
AVTM & SBL Gross Cost tender with any net revenue surplus being retained authority	Quality of service is specified in tender. Infrastructure is open access but quality thresholds of other services (NSC buses, the flyer) is controlled through private ownership of busway and the QPS itself.	SBL integrated service with AVTM. All aspects of the AVTM and SBL service can be specified in the tender. The forecast net revenue surplus per annum retained by authority and used to support other authority tendered services
NFHP southern route delivered commercially and extended to northern half potentially via De-minimus tender, giving main southern to northern route	Infrastructure is open access but quality thresholds governed through a QPS and enforced by the Traffic Commissioner.	NFHP southern has high frequency commercial bus services. Maximum fares can be included in the QPS with agreement of the commercial operator.
NFHP various new services in northern half potentially procured via tender	Quality of new RT routes is specified in tender.	The new services can be specified in the tender and tailored to fit with the NFHP commercial routes

Table 1.10: Bus Operations Arrangements

3.6 CONTRACT CONDITIONS

3.6.1 The Office of Government Commerce (OGC) advises public sector procurers that the form of contract used has to be selected according to the objectives of the project, aiming to satisfy the Achieving Excellence in Construction (AEC) principles. OGC recommends the use of the New Engineering Contract Third Edition (NEC3), Engineering and construction contract (ECC) by public sector construction procurers on their construction projects.

3.6.2 Bearing these principles in mind for the infrastructure and structural elements of the Rapid Transit Schemes the following contract conditions will apply:

Conventional Detailed Design

– New Engineering Contract PSC Conditions from the Regional Improvement and Efficiency Programme Framework (RIEP)

Design & Build Contracts

– NEC3, ECC Option A modified to Design and Build

– Design and Build Target Cost Option C modified to Design and Build

Construction Contract

– NEC3, TSC Option A, or C

3.6.3 The flexibility of the NEC3 form of contract allows the choice of conventional, design and build or ECI contracts to be used with or without financial incentives and with or without risk transfer. It is therefore recommended that the contract for the appointment of the main works contractors (with or without a design partner) should be under the NEC3 form of contract rather than other less flexible forms.

3.6.4 The NEC3 contract has the unique distinction of a full endorsement from the UK Governmental OGC, which recommends NEC3 for usage on all public sector construction projects.

3.6.5 The options which use bill of quantities are not being suggested as the risk of taking on the quantities risk is to greater a risk and places the quantity risk onto the client.

3.6.6 NEC3 comprises a suite of contracts which can be used for all types of construction and service provision work. The provisional options for the RTS schemes are listed in Table *1.11*.

Option	Title	Scheme Element
NEC3 ECC Option A	Priced contract with activity schedule D&B	SBL structures, SBL Network Rail contract, AVTM Structures, AVTM Network Rail Structures, NFHP New Cut, NFHP Stoke Gifford Railway Bridge, NFHP M32 HA works.
NEC3 ECC Option C	Target contract with activity schedule D&B	AVTM Bus Guided Infrastructure
NEC3 TSC Option A	Priced Task Orders	AVTM City Centre Loop, NFHP City Centre
NEC3 TSC Option C	Priced Task Orders, paid on Actual Cost	All NFHP: Cribbs Causeway and Aztec West, Bradley Stoke Way and Parkway Station X 2 packages, Stoke Gifford Transport Link, East Fringe, City Centre, South Bristol X 2 packages. SBL sections 1 to 14.

Table 1.11: Table of NEC3, ECC and TSC provisional contract options

3.6.7 In Option A – Priced contract with activity schedule; the contractor provides information which shows how each activity on the schedule relates to the operations on each programme which he submits for acceptance. This option does not include clause 40.7 for tests and inspections. It is the only option where payment due on termination is assessed without taking grouping of activities into account.

3.6.8 In Option C – Target contract with activity schedule; the contractor provides information which shows how each activity on the schedule relates to the operations on each programme which he submits for acceptance. When the Project Manager assesses the cost incurred by the employer in repeating a test or inspection after a defect is found, the Project Manager does not include the contractors cost of carrying out the repeat test or inspection. This option uses ‘contractors share’ as an incentive to minimise construction costs.

3.6.9 There are three aspects to procurement, Time, Quality and Cost. They are mutually exclusive, for example, if you require something quickly then you are likely to have a poor quality product at a high cost. The main drivers for the rapid Transit Schemes scheme are assumed to be Quality and Cost, as a reasonable time period has been provided. Therefore Quality and Cost considerations are the current parameters, which will deliver the required procurement strategy and either ECC D&B options or unmodified Term Service Contract current contract conditions and anticipated new TSC contracts in Bristol City Council (BCC).

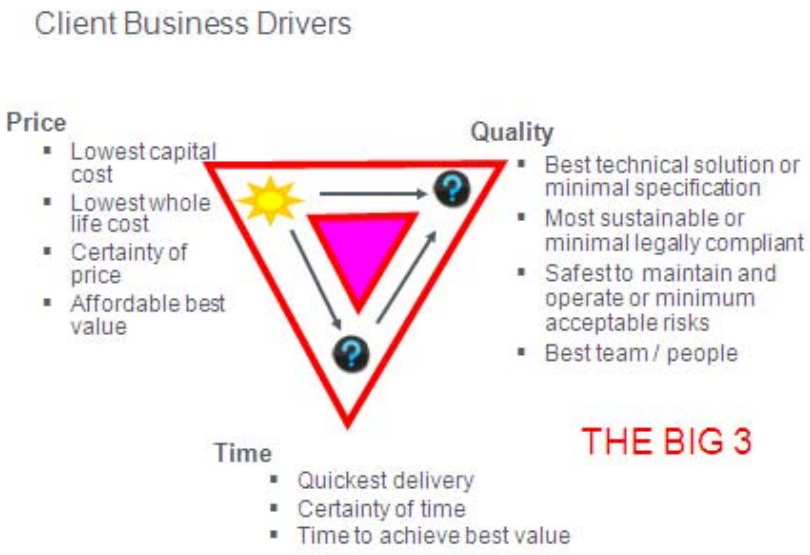
3.6.10 The current 'Streetcare' contracts in South Gloucestershire and anticipated new overarching term contract for highway infrastructure works in BCC utilise the NEC3 Terms Service Contract (TSC). The TSC contracts will utilise the Price List and the secondary clause X19 which allows Task Orders to be issued under the contract. The cost certainty is the tendered Price List.

4 Procurement Strategy

4.1 DESCRIPTION OF THE MULTI FUNNEL

4.1.1 It is a process by which the optimum contract can be found for a procurement using the tried and tested procurement paradigm. It has been used to assist in the selection of the right procurement strategy for the West of England Authority Rapid Transport Schemes. It provides an auditable route to selection, informs contract drafting, it is useful for reassigning risks at each project step and conforms to 'Achieving Excellence in Construction and Gateway Review Process. The process was used to determine a set of criteria to use in the MCAT model and also to further refine the option which came out of the MCAT appraisal

4.1.2 The process starts by mapping the client business drivers and can be described using the following graphic:



4.1.3 With the 'Big 3' in mind a series of questions were asked via project management workshops against each scheme to build a profile of client expectations to determine what was important in terms of:

- Funding Issues;
- Total costs exceeding the budget;
- Timings and effects of delay;
- No go issues; and
- Specific risks to address.

4.1.4 These were used as a thought provoker for each scheme in order to address the further following questions:

Who will carry out the design?

4.1.5 There are a number of ways design can be carried out, for example it can be carried out by the client or on behalf of the client and can be a detailed specification which specifies every detail and design standard with general arrangement and detailed drawings. The design is used to invite tenders to derive a competitive price. The question in this strategy is which elements of the schemes warrant this approach and why? The elements of the schemes which are lower risk and can be specified in a timespan that can do this without extra site investigation and specialist expertise. The highway works junction improvements can be designed with a great degree of certainty without a high degree of associated risk. This will derive cost certainty, especially if existing contracts with tendered 'Price Lists' are utilised.

4.1.6 The design can be completely passed over to a contractor to procure and manage. This is usually as part of a Design and Build Contract. The contractor is therefore taking the risk for design and subsequent cost and programme. The reason for this transfer can be explained by risk, time and complexity. The structures and guided corridor throughout all three RTs schemes pose high degree of risk, they need to be completed on time to join up to the highway works and the supply chain will ensure the design and performance meets the performance specification. There is also cost certainty to the client.

4.1.7 In terms of the guided corridor the supply chain is in a better position to provide innovation and provide the solution through a main contractor. There are several interface issues which must be met. If a traditional design was used this could result in re design and delays where solutions were wrong. The risk would lie with the main D&B contractor.

Control of costs - construction?

4.1.8 There are different ways to calculate costs. Lump sums can be expensive if they have to be changed. The question was asked to the client to make sure that the exact scope of the performance specification for the structures was not too bigger a risk. Re measurable contracts were discounted as the client takes the risk of quantity changes. This would be in the form of NEC 3 Option B, and was not considered further in the contracting options. Target price is a consideration when the client wants the contractor involved in minimising quantity and cost. This can be through working collaboratively and in an innovative way to beat a Target. The Guided Bus Corridor and Stadium works on AVTM have a high degree of innovation and this was considered when drawing up the D&B Target Price strategy.

Control of costs – design and project management?

4.1.9 The control of design costs is equally required for the control of project costs. Consideration was given to managing design costs. The options considered were in-house versus existing and new frameworks. Frameworks can offer cost certainty for specific tasks.

Time period, how long have we got?

4.1.10 What do the programmes look like; will the proposed strategy deliver on time? The current programmes were analysed for key milestones with a view to how long it would for the lead for the procurement of the works and hardware. This was one factor that aided the decision to go down the D&B route for the structures and AVTM infrastructure packages.

4.1.11 The following are further questions that were asked to narrow the funnel down.

Risk transfer, mitigation and acceptance

4.1.12 The risks that are inherent in construction contracts need to be managed by the most appropriate contract mechanism. Some contract mechanisms transfer risk by there very nature such as lump sum D&B or traditional detailed specified lump sum contracts. Target contracts enable risk to be jointly managed but require hands on contract management. These consideration were in the funnel technique analysis and concluded that the risks transfer offered by lump sum D&B contracts was entirely appropriate for the structures packages. The target cost D&B was allowing the contractor to set an appropriate target including known risks but the onus will be on joint management once the contract is on site and this form of contract is the preferred option due to the nature of the works in the guided corridor.

KPI's and incentives

4.1.13 These work well on frameworks and long contractual relationships where performance can determine whether a supplier will get repeat work. With the hybrid strategy using new and existing contracts the consideration was for an Alliance Charter to be part of all the existing and new contracts which will give the packaged approach a degree of value for money control.

Form of contract – bespoke or standard form?

4.1.14 Tried and tested conditions are always a preferred option. The reason being there is legal precedence and they have been tried and tested and enhanced. Why reinvent the wheel? For this reason the NEC suit of contracts was considered for the infrastructure contracts.

4.2 THE MULTI CRITERIA ASSESSMENT TOOLKIT

4.2.1 This technique is used to refine the parameters derived from the multi funnel technique. WSP facilitated an appraisal workshop using a Multi-Criteria Assessment Tool (MCAT) considering the broad strategies for across the three rapid transit schemes.

4.2.2 The MCAT is a tool that allows appraisal of a range of procurement options based on agreed and weighted criteria. The criteria are based on the overall rapid transit scheme objectives.

4.2.3 The appraisal workshop was undertaken with key scheme project managers and bus operations and procurement officers from the four authorities together with the WoE. The workshop appraisal involved scoring the procurement strategies against the agreed criteria.

4.2.4 The advantage of using the MCAT is that it provides an audit trail for transparent decision making and clearly links directly back to meeting scheme objectives and hence securing Value for Money.

Infrastructure Appraisal MCAT

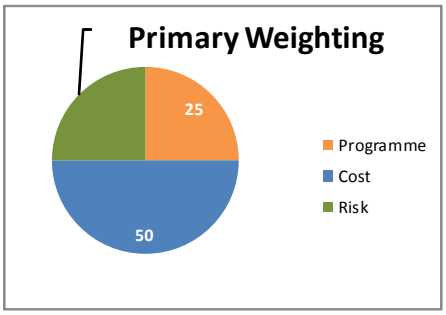
4.2.5 The Infrastructure Appraisal considered the following main headings:

- Programme;
- Cost; and
- Risk.

4.2.6 These headings were prioritised and weighted by the attendees at the workshop and this is set out below.

How important are the three main criteria of **Programme, cost and risk** compared with each other?

Programme	25	%
Cost	50	%
Risk	25	%
Total	100	%

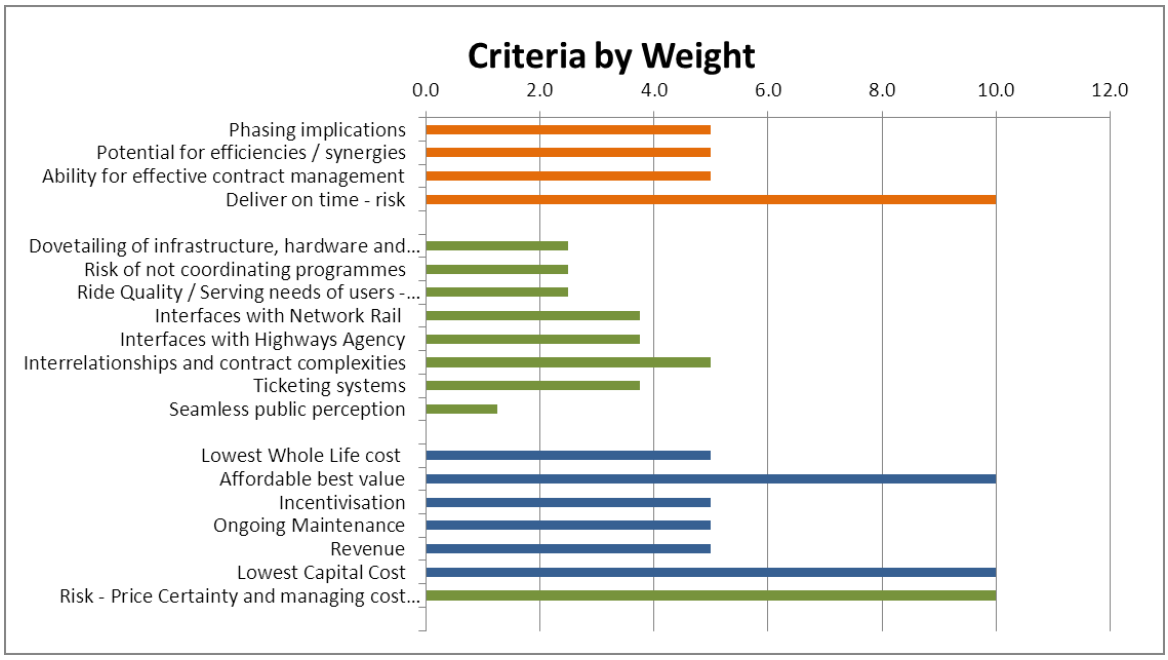


4.2.7 These main headings were split into criteria. The 3 main headings have sub-criteria under these representing more detailed objectives, as show below in Table1.12.

Programme sub objectives:		
Phasing implications	20	%
Potential for efficiencies / synergies	20	%
Ability for effective contract management	20	%
Deliver on time - risk	40	%
Cost sub objectives:		
Lowest Whole Life cost	10	%
Affordable best value	20	%
Incentivisation	10	%
Ongoing Maintenance	10	%
Revenue	10	%
Lowest Capital Cost	20	%
Risk - Price Certainty and managing cost escalation	20	%
Risk sub headings / objectives:		
Dovetailing of infrastructure, hardware and services	10	%
Risk of not coordinating programmes	10	%
Ride Quality / Serving needs of users - quality / image	10	%
Interfaces with Network Rail	15	%
Interfaces with Highways Agency	15	%
Interrelationships and contract complexities	20	%
Ticketing systems	15	%
Seamless public perception	5	%

Table1.12: MCAT Infrastructure Sub-Criteria

4.2.8 The summary of the weighted criteria is shown below.



4.2.9 The proposed procurement methods that were considered as part of the MCAT appraisal are as shown in Table1.13.

Method	Description
PFi	A long term contract let over a number of years with performance standards and guaranteed payments made by the Client over the duration of the contract. All aspects of the service included, design, construction and operation and improvement.
DBFO	One organisation who provides the infrastructure and hardware and maintains it over a long period.
Competition Separate Contracts	Packaged approach separate new tendered contracts for all requirements
Hybrid - using existing contracts and competition for high risk contracts	Using existing LA contracts and letting packages off work for high risk corridor works, structures and refurbishment contracts
Alliance	A consortium approach where all services/works and hardware are provided by separate organisations but who are incentivised to deliver as 'one procurement vehicle' Partnering agreement signed up to by all parties.
ECI Contract	Manages their own supply chain to deliver all design, PM, works and hardware. Can be a JV or consortium.
Framework (Lots)	Several suppliers all part of one framework which may be divided into lots, more than one supplier in each 'Lot'
Management Contractor	A lead contractor responsible for managing services, construction through coordination of contractors, sub contractors and suppliers. He can be responsible for pre-construction services.

Table1.13: Infrastructure MCAT Procurement Strategy Options

Bus Operations Appraisal MCAT

4.2.10 The Bus Operations appraisal considered the following main headings:

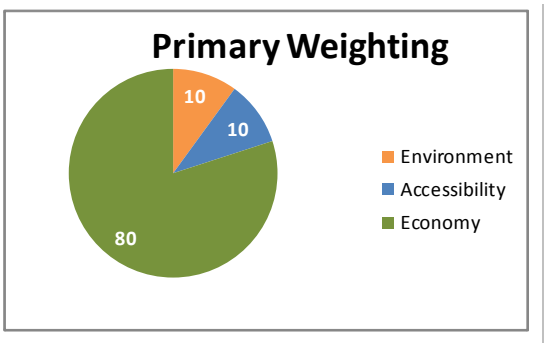
- Environment;

- Accessibility; and
- Economy.

4.2.11 These headings were prioritised and weighted by the attendees at the workshop and this is set out below.

How important are the three main criteria of **Environment, Accessibility & Economy** compared with each other?

Environment	10	%
Accessibility	10	%
Economy	80	%
Total	100	%

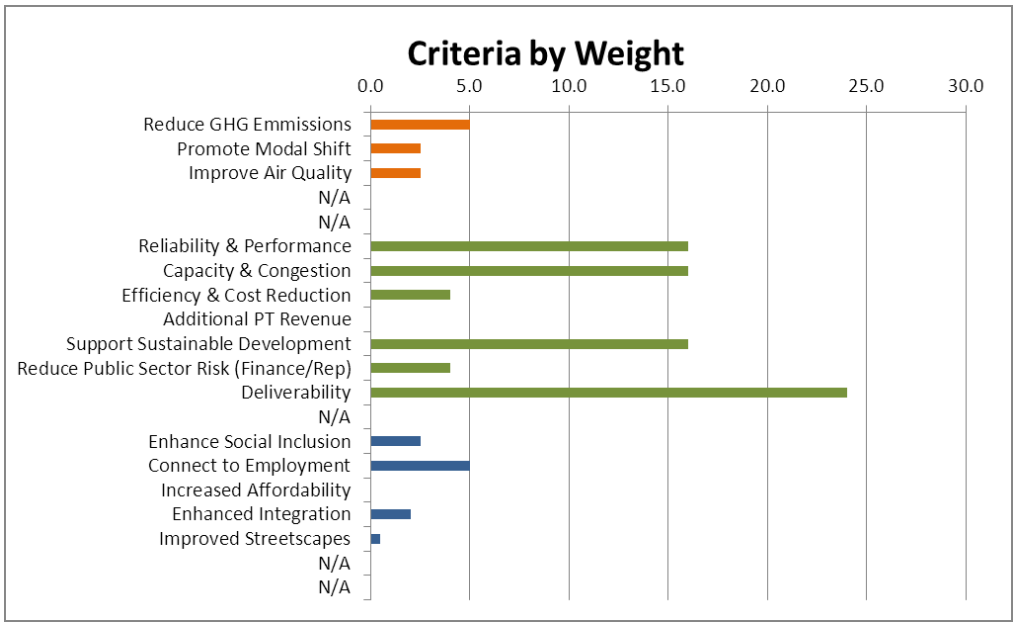


4.2.12 These main headings were split into criteria. The 3 main headings have sub-criteria under these representing more detailed objectives and these are set out in Table1.14.

Environment Objectives Sub-Criteria		
Reduce GHG Emissions	50	%
Promote Modal Shift	25	%
Improve Air Quality	25	%
Accessibility Objectives Sub-Criteria		
Enhance Social Inclusion	25	%
Connect to Employment	50	%
Increased Affordability	0	%
Enhanced Integration	20	%
Improved Streetscapes	5	%
Economy Objectives Sub-Criteria		
Reliability & Performance	20	%
Capacity & Congestion	20	%
Efficiency & Cost Reduction	5	%
Additional PT Revenue	0	%
Support Sustainable Development	20	%
Reduce Public Sector Risk (Finance/Rep)	5	%
Deliverability	30	%

Table1.14: MCAT Operations Sub-Criteria

4.2.13 The summary of criteria by weight is shown below.



4.2.14 Within the appraisal the following different bus operations procurement options were considered, as shown in Table1.15.

Open Access	'Business as Usual' deregulated market
Tendered Services	Services provided through standard bus service contracts
Voluntary Agreements	Voluntary Partnership Agreements (Between LA and bus operators)
Qualifying Agreements	Registered agreements between bus operators only to coordinate services
Quality Partnership Schemes	Statutory Agreements (LA & bus operators)
QPS with Tendered Services	QPS enhanced with secured service provision
Quality Contract Schemes	Full area based Quality Contract Scheme

Table1.15: Operations MCAT Procurement Strategy Options

4.3 DERIVATION OF RISK PROGRAMME, COST AND QUALITY PRIORITIES

4.3.1 The overall weightings for programme, cost and quality were agreed using technology and the results were:

- Programme 25% ;
- Cost 50%; and
- Risk 25%

4.3.2 Building on the questions asked using the multi funnel technique a set of sub categories needed to be a formulated for use in the model. A workshop containing key designers, project managers and client representatives was a forum where these parameters were agreed.

4.3.3 The sub category categories and weightings for programme derived from the multi funnel questions were as follows:

- Phasing Implications 20%

- Potential for programme efficiencies and savings 20%
- Ability for effective contract management 20%
- Deliver on time 40%

4.3.4 Each of these sub categories were then weighted using voting software and the percentages entered into the model.

4.3.5 The sub category categories and weightings for cost derived from the multi funnel questions were as follows:

- Lowest whole life cost 10%
- Affordable best value 20%
- Incentivisation 10%
- Ongoing Maintenance 10%
- Revenue 10%
- Lowest Capital cost 20%
- Price certainty and managing cost escalation 20%

4.3.6 The sub category categories and weightings for risk derived from the multi funnel questions were as follows:

- Dovetailing of infrastructure, hardware and services 10%
- Risks of not coordinating programmes 10%
- Ride quality/serving needs of users and image 10%
- Interfaces with Network Rail 15%
- Interfaces with Highways Agency 15%
- Interrelationships and contract complexities 20%
- Ticketing systems 15%
- Seamless public perception 5%

4.3.7 Further definitions of these sub categories are contained in Appendix A.

4.3.8 The overall weightings of the sub categories were calculated and then applied to the different strategies relevant to the projects. The selection of the strategies was based on the OGC's Achieving Excellence in Construction guidelines.

4.3.9 The programmes across the three rapid transit schemes have been assessed and synergies identified as summarised in Table1.16 below with opportunities for joint procurement arrangements.

Category	Scheme	From	To	Duration (Months)	Potential for Synergy
Land Acquisition and Ownership	AVTM	17/02/2011	30/12/2012	23	All overlap so yes, but probably no strong benefit to linking
	NFH	06/08/2012	05/07/2013	11	
	SBL	01/06/2011	02/09/2014	40	
Infrastructure Construction	AVTM	04/06/2013	30/01/2015	20	On certain elements, such as NFH South and SBL, bridges, and city centre
	NFH	01/02/2014	24/07/2016	30	

	SBL	31/10/2014	28/10/2016	24	works
Utility Liaison + Construction	AVTM	04/04/2011	30/11/2014	45	No benefit to linking as relate to specific scheme elements
	NFH	01/04/2013	13/09/2013	6	
	SBL	01/10/2014	01/04/2016	18	
Ground Investigation Works	AVTM	04/04/2011	20/05/2011	2	No benefit to linking
	NFH	01/04/2011	30/06/2011	3	
	SBL	03/05/2011	29/09/2011	5	
Detailed Design	AVTM	01/08/2011	31/12/2011	5	Needs to be on AVTM and NFH city centre elements
	NFH	01/01/2012	06/03/2013	14	
	SBL	01/02/2014	30/10/2014	9	
Main Works Infrastructure Construction	AVTM	01/07/2013	30/06/2015	24	On certain elements, eg minor highways etc
	NFH	01/02/2014	30/07/2016	30	
	SBL	01/10/2014	30/11/2016	26	
Project Management and Cost Control	AVTM	02/01/2012	30/06/2015	43	Strong connections across schemes for coordinating through PM and cost control
	NFH	01/04/2011	30/06/2016	64	
	SBL	06/04/2011	31/05/2016	63	
City Centre Loop/Elements	AVTM	01/07/2013	30/06/2015	24	Yes - need to manage TM effectively across all work elements
	NFH	01/04/2014	30/09/2015	18	
	SBL	n/a	n/a		
Structures	AVTM	01/06/2013	01/06/2014	12	Yes for effective management of risks with NR. Others could be procured jointly or part of main works contract
	NFH	16/09/2013	15/08/2014	11	
	SBL	01/03/2015	01/03/2016	12	
Shelters	AVTM	01/11/2014	30/01/2015	3	Yes same supplier for standard specification/ensure quality
	NFH	01/02/2015	01/07/2016	17	
	SBL	01/08/2016	01/10/2016	2	
RTPI	AVTM	01/04/2014	30/04/2015	13	Yes same supplier for standard specification/ensure quality
	NFH	01/02/2015	15/08/2016	19	
	SBL	01/03/2016	30/10/2016	8	
Ducting	AVTM	n/a	n/a		No - Part of main works contract
	NFH	n/a	n/a		
	SBL	n/a	n/a		
Signals	AVTM	01/07/2013	30/01/2015	19	Part of on-street elements so yes but could all use same framework arrangements
	NFH	01/06/2014	01/06/2016	24	
	SBL	01/10/2015	01/10/2016	12	
Ticketing	AVTM	01/11/2011	30/04/2015	43	Yes same supplier for standard specification/ensure quality across whole WoE
	NFH	01/11/2011	01/06/2016	56	
	SBL	01/11/2011	01/12/2016	62	

Includes estimates on certain programme elements, using assumptions from other schemes (such as RTPI on AVTM)

Table1.16: Infrastructure Programme Synergies

4.3.10 In terms of bus operations the services need to be up and running from day one when the infrastructure construction is complete and ready for operations. The procurement strategy will ensure that quality services are able to operate when required. The strategy is flexible enough such that an overarching QPS can govern quality and branding and services can be introduced as required by taking advantage of upgraded existing commercial or re-tendered services and the introduction of new tendered or commercial services.

4.3.11 A clear aim is for reduced risk to the local authorities on subsidy for bus services in the current financial spend reductions.

4.4 MANAGING EXPECTATIONS

4.4.1 This strategy has had to make sure that the public's aspirations are being met. The proposed packaged strategy for NHFP parts of AVTM and the majority of SBL will in part use a packaged approach drawn from the Term Service Street Care contracts as well as the other proposed packages which will use existing and new contracts. This means that the delivery will be seamless and packaged in such a way as to minimise the disruption to the public and it allows the effective management at a local level of traffic management and avoids disruption from major events. The packaged approach will allow local issues to be more readily managed.

4.4.2 In respect of bus operations the clear challenges addressed by this strategy are:

- Meeting user expectations of quality and image for a rapid transit;
- Providing for political aspirations; and
- Tackling bus operating environment to upgrade and update the services.

4.4.3 The Programme Delivery Board are aware of the ongoing operational requirements and will address these as the procurement strategy is delivered.

4.5 INTEGRATION WITH EXISTING PROCUREMENT ARRANGEMENTS

Infrastructure

4.5.1 The role of the proposed Alliance Board will manage risks across the programmes. As part of the Governance structure an Alliance Board will develop and maintain efficient and effective procedures and processes to support the value for money objective. This will equate to having standard reporting templates which will monitor progress, performance, value (through earned value reporting) lessons learned and future priories and will be shared across all the parties delivering the contracts.

4.5.2 Not all the supply chain will be in the Alliance Charter. There will be a core which will manage second and third tier suppliers and make them aware of their obligations under the Alliance.

Bus Operations

4.5.3 The bus operations procurement strategy is designed to provide wider integration with operating regimes for GBBN and those services that already exist either commercially or on a tendered basis.

4.5.4 This is achieved by use of a negotiated partnership approach through the QPS.

4.6 MCAT RESULTS

4.6.1 At each workshop with all Project Manager's a scoring exercise was undertaken on a scale from +3 to -3 with 0 as neutral to reflect the level of impact from positive to negative.

Infrastructure

4.6.2 The outcome of the appraisal workshop scoring is set out below.

		Programme				Cost							Risk							
ID	Description																			
1	PFi	-2	-1	-2	-2	-1	-2	0	2	0	-3	3	2	-1	1	-1	0	-1	0	-1	7
2	DBFO	-2	-1	-2	-2	-1	-1	0	2	0	-3	2	2	-1	1	-1	0	-1	0	-1	6
3	Competition Separate Contracts	-2	-2	-2	-1	-1	-1	-3	-2	0	1	-2	-3	-3	1	1	-3	1	-3	1	8
4	Hybrid - using existing contracts and competition for high risk contracts	1	2	2	0	1	1	1	2	0	2	-1	2	2	2	1	-1	1	0	1	1
5	Alliance	0	3	2	0	1	0	2	0	0	2	1	2	1	2	1	0	1	1	1	2
6	ECI Contract	-1	3	0	1	-2	-2	1	-1	0	-2	-3	2	-1	0	1	1	1	0	1	4
7	Framework (Lots)	0	2	-1	-1	1	1	2	-1	0	1	-1	2	-1	2	1	-1	1	0	1	3
8	Management Contractor	-2	-1	0	1	-2	-2	0	-2	0	-2	-3	2	2	-2	1	-2	1	1	1	5

4.6.3 The results from the appraisal show that the Hybrid Model was the preferred option. This model gave a new basis on which further refinement was possible using the Multi Funnel Technique. The description of the Hybrid was described as: 'Existing Procurement Routes combined for all three RTS schemes (supplemented by competition for specific or higher value/risk areas)' in the MCAT model. The model proved that the time, cost and quality sub categories scores the most highly for this strategy. However further refinement of this strategy was required. In order to do this the following questions were considered:

- Who is best placed to manage risk?
- How will the programme ensure value for money and optimum solutions are adopted?
- Which contracts currently exist and what do they offer?
- Will D&B give better outcomes for delivery and cost certainty?

4.6.4 The outcomes from these questions formed the proposed procurement solutions within the hybrid model. The three main procurement strategies which were therefore derived within this model were:

(i) Packaged approach using new and existing contracts;

(ii) D&B Structures Packages; and

(iii) An option to entering into a Collaborative Agreements with Network Rail and the Highways Agency.

4.6.5 The `Alliance' approach in this procurement strategy is the management of the selected hybrid approach and is therefore different to the `Alliance' option in the table.

Bus Operations MCAT Appraisal

4.6.6 The outcomes of the bus operations appraisal workshop scoring is set out below. This was on the basis of considering the whole rapid transit network across all three rapid transit schemes.

	Environment					Accessibility							Economy								
Description																					
Open Access	-1	0	0	0	0	0	0	-1	-1	0	0	0	0	-1	1	-1	0	2	3	0	**6**
Tendered Services	3	3	3	0	0	3	3	3	3	0	0	0	3	3	2	2	3	-3	-2	0	**3**
Voluntary Agreements	2	2	2	0	0	2	2	2	2	0	0	0	2	2	0	0	2	-3	1	0	**4**
Qualifying Agreements	1	-1	1	0	0	0	0	0	1	0	0	0	-1	-1	2	0	0	2	1	0	**7**
Quality Partnership Schemes	3	3	3	0	0	2	2	3	2	1	0	0	3	3	2	2	3	-1	-1	0	**2**
QPS with Tendered Services	3	3	3	0	0	3	3	3	3	1	0	0	3	3	2	2	3	-1	-1	0	**1**

4.6.7 This same exercise was undertaken for the individual schemes, albeit linking SBL to AVTM and NFH as a standalone scheme.

AVTM and SBL

4.6.8 The outcome of scoring these schemes in combination is shown below:

	Environment			Accessibility					Economy							
Description																
Open Access	-1	0	0	0	0	-1	-1	0	-2	-1	-1	-1	0	2	1	**7**
Tendered Services	3	3	3	3	3	3	3	0	3	3	2	3	3	-2	1	**1**
Voluntary Agreements	2	2	2	2	2	2	2	0	-1	2	-1	-1	2	-3	1	**5**
Qualifying Agreements	1	-1	1	0	0	0	1	0	-1	-1	1	0	0	1	1	**6**
Quality Partnership Schemes	3	3	3	2	2	3	2	1	1	2	1	1	3	-1	-1	**4**
QPS with Tendered Services	3	3	3	3	3	3	3	1	3	3	2	2	3	-1	-1	**2**

4.6.9 As would be expected there is the need and ability for greater degree of control on the guided busway sections and due to the presence of the Park & Ride (again ability for the LA to have greater control) this lends itself to a direct tendered arrangement or QPS with tendered service(s).

NFH

4.6.10 The outcome of scoring the NFH scheme is shown below:

	Environment			Accessibility					Economy							
Description																
Open Access	-1	0	0	0	0	-1	-1	0	0	-1	1	-1	0	3	3	**6**
Tendered Services	3	3	3	3	3	3	3	0	3	3	1	2	3	-3	-3	**5**
Voluntary Agreements	2	2	2	2	2	2	2	0	2	2	0	0	2	-2	1	**3**
Qualifying Agreements	1	-1	1	0	0	0	1	0	-1	-1	2	0	0	2	1	**7**
Quality Partnership Schemes	3	3	3	2	2	3	2	1	3	3	2	2	3	-1	-1	**1**
QPS with Tendered Services	3	3	3	3	3	3	3	1	3	3	2	1	3	-3	-2	**2**
Quality Contract Schemes	3	3	3	3	3	3	3	1	3	3	2	2	3	-3	-3	**4**

4.6.11 As would be expected there is the need to reflect the differing operating regimes, noting existing commercial operations, together with new services being required.

5 Payment Mechanisms

5.1 INTRODUCTION

5.1.1 There are several payment mechanisms that will be used in the construction contracts. In this context they can be categorised as lump sum prices and target prices and schedule of rates. The NEC3 contract options specify how to price for risk, change and insurances. The mechanisms are integral to the contract and describe how to quantify payment, when it is due and what happens when changes by both client and contractor occur.

5.2 PROPOSED ARRANGEMENTS

Infrastructure

5.2.1 The Term Service Contracts which will be used for the highway and junction works on the showcase corridors, which exist and proposed for Bristol City Council have two mechanisms available. The first is a Price List of all the typical highway construction detail which follows the Manual of Contract Documents for Highways Works (MCHW) principles. The packages of work will be called off form the term contracts using Task Orders which use tendered lump sum prices from the contract. The contracts have and will have a mechanism to agree non-standard rates and changes to estimated quantities. The contract has a robust procedure for managing changes and dealing with risks. A Target Mechanism allows the prices from the Price list to set a Target and an incentive mechanism will operate which allows joint management of risk between both parties. For the majority of the packaged work using existing and new contracts, the Target will act as an incentive.

5.2.2 The D&B contracts will use two mechanisms based on the same principles of Lump Sums and Target Prices. The Lump Sum prices will be tendered by the successful D&B Contractor and assessed by a cost manager to ensure value for money. The lump sum prices for design and the works will be paid on completion of activities. The prices will be based on an appropriate method of measurement appropriate to the specialist nature and refurbishment of the structures. The Target Mechanism will allow for an incentive mechanism to run. A typical example is shown in Table1.17.

Out Turn Cost of Scheme	Possible Contractor pain/gain mechanism
Less than 80% of Target Price	Contractor paid 20% of under spend
From 80% to 90% of Target Price	Contractor paid 30% of under spend
From 90% to 100% of Target Price	Contractor paid 50% of under spend
From 100% to 110% of Target Price	Contractor pays 50% of over spend
From 110% to 120% of Target Price	Contractor pays 70% of over spend
Greater than 120% of Target Price	Contractor pays 80% of over spend

Table1.17: Example Pain/Gain Mechanism

5.2.3 The supply and install contracts for bus shelters, RTPI and CCTV installations are assumed to be based on the cost of materials and would use a schedule of rates for the installation. The costs are transparent as the material costs would be separated from the plant and labour costs.

Bus Operations

5.2.4 Tendered services for AVTM and SBL will be contracted on gross cost basis with revenue retained by the local authority.

5.2.5 For the NFH services these will also be tendered but exact mechanisms will need to be determined following closer understanding of the service levels that operators will be prepared to operate.

Ticketing

5.2.6 Standard local authority processes for payment will be utilised in accordance with established contracts.

5.3 ALLIANCE PROPOSAL

5.3.1 Whilst it is difficult to 'impose' mechanisms across differing contracts, the principles of achieving value for money will be stated through an incentive mechanism in all the new contracts.

5.4 SATISFYING OGC

5.4.1 The Office of Government Commerce (OGC) advises public sector procurers that the form of contract used has to be selected according to the objectives of the project, aiming to satisfy the Achieving Excellence in Construction (AEC) principles. OGC recommends the use of the New Engineering Contract Third Edition (NEC3), Engineering and construction contract (ECC) by public sector construction procurers on their construction projects.

5.4.2 The NEC3 contract therefore has the unique distinction of a full endorsement from the UK Governmental OGC, which recommends NEC3 for usage on all public sector construction projects.

6 Pricing Framework and Charging Mechanisms

6.1 INTRODUCTION

6.1.1 The majority of the payment mechanisms will be from well-established contract forms. It is likely the infrastructure contracts will use NEC3 ECC and TSC payment mechanisms. It is likely the structures packages will use NEC3 ECC Option A and C payment mechanisms.

6.2 ACHIEVING VALUE FOR MONEY

6.2.1 The TSC contract Prices have and will use a well-established method of measurement to derive the Price List. The tendering contractors will have built their costs up in line with the Manual Contract Documents for Highway Works (MCHW) Method of Measurement and from any amendments which deal with non-standard items which require a new coverage item thus providing value for money to the client.

6.2.2 The activity schedules which are provided by the Main Contractors for the Option A and C structures and infrastructure packages will have been prepared in accordance with a method of measurement. The need for commercial support to verify the lump sums and target prices will be required to ensure value for money.

6.3 THE INCENTIVISATION OF EXISTING CONTRACTS

6.3.1 The current contracts which are in the main administered by South Gloucestershire Council will need a lead in period to explain the reasoning of the introduction of the incentive mechanism. They need to be bought into the principles in advance of the packages going live for the RTS schemes. They have experience on working for the Greater Bristol Bus Network (GBBN) project so will be familiar with the concept.

6.3.2 The Governance structure to manage the existing contracts will provide a basis for continual improvement over from 2013 to 2017. The existing contracts have extension options and these should be tied into performance on the RTS schemes.

7 Risk Allocation Transfer

7.1 MAIN SCHEME RISKS

7.1.1 The main scheme risks are summarised in the BAFB forms. The common risks across the three rapid transit schemes are also identified.

7.1.2 This shows that there are common risks to all three rapid transit schemes, and as such the procurement strategy sets out packages of work to effectively reduce risk. It also ensures that these are transferred and / or placed with those best placed to manage them.

7.2 TACKLING RISKS

Infrastructure

7.2.1 Risk Registers for all the packages and D&B contracts have and will be produced. They will form part of the contracts and Task Orders that are awarded. The risks are transparent and will be included for inclusion for all the pricing options. Where a D&B contract is awarded it will include an allowance for the contractor to include his allowances for risk.

Operations and Ticketing

7.2.2 For the Ticketing Strategy this will largely be a commercial operator led activity. Mechanisms and contracts are already in place through the area wide ITSO HOPS and CMS to be able to host the products on all vehicles; and between the Smartcard Management Board and local operators for day to day ITSO transactions and multi operator products. The Major Scheme partners will amend their tender specification requirements in 2012 to require ITSO POSTs on all tendered services to capture any new market entrant. As such the majority of Risk will be held by the bus operators, with contractual support to ensure compliance.

7.2.3 Where Risk remains with the Major Scheme local authority partners, this will be managed through the Smartcard Management Board. Such risk is likely to relate to revenue apportionment arising from the off bus ticketing and the operation of the new ITSO / EMV Readers at Bus Stop locations along the Rapid Transit Vehicle routes. These risks will be incorporated into the existing Risk Management Strategy in place for the Smartcard Programme Board.

Bus Operations

7.2.4 In terms of bus operations the key is the timescales for delivering services through QPS rather than lengthy negotiations and uncertainty with quality contracts. Other risks include securing appropriate vehicle quality, common branding and ensuring a rapid transit image. The procurement strategy proposes an overarching area wide QPS with a mix of commercial and tendered services to deliver appropriate service levels. A strategy of early engagement and inviting operators through Voluntary Agreement processes to submit proposals will identify early on possible risks that can be then mitigated through use of further tendering of services.

7.2.5 Authorities are also looking to reduce the risk for bus subsidy and challenge. This will be addressed by maximising the potential for commercial operations and tendering services on routes where revenue is likely to be stronger.

7.3 CONTRACTOR RISKS

7.3.1 All civil engineering contracts, executed under seal, include latent damages for twelve years. The contractor is therefore liable for any significant faults arising as a result of any failure on their behalf for twelve years after completion. In practice this usually requires prolonged legal action, during which time the faults remain unresolved and the problem can escalate.

7.3.2 Under a conventional contract the contractor is liable for all defects arising during the first year as a result of construction and a proportion of the construction costs are retained and released at the end of the year, providing any defects have been rectified. This is considered not to guarantee to deliver the long-term reliability and ride quality required for the guided busway.

7.3.3 An extended defects liability period of ten years is a possible solution for the guided busway infrastructure where performance of the asset is critical. A contractor would be responsible for rectifying defects in the construction. It is considered that this period would be long enough for any defects to come to light and it would ensure a high quality of construction. This should be considered in addition to an appropriate retention. This would be released in annual instalments subject to continuing satisfactory performance of the guideway infrastructure.

7.3.4 There are specific risks appertaining to the three main Network Rail structures. They concern the delays from approvals and possessions and potential costs of overrun. One way to overcome these major risks is to pass the responsibility of all rail bridges to Network Rail to design, procure and manage. The benefits of this approach mean that they can use their expertise to deliver and programme the works within the overall programme. However there are potentially no safeguards to manage the costs and Network Rails' track record in delivering this type of strategy is unproven. The alternative is to let the structures as a package by the client and create a delivery unit responsible for the procurement of the design and construction through a D&B package. This is work in progress and the strategy is being developed in conjunction with Network Rail and the DfT.

7.4 MANAGING RISKS

7.4.1 For infrastructure, the NEC3 contracts have a well tried method to manage risks. The contracts states who manages the risks and it has a contractual mechanism to manage new risks that occur. The governance structure will be set up to make sure all existing and new risks are managed through the Alliance Board and the need for early dialogue between all parties concerning risks will part of the Alliance Charter as will ways to jointly across packages and contracts.

8 Funding Strategy

8.1 PHASING

8.1.1 The procurement strategy is in line with appropriate levels of annual spend on the three rapid transit schemes. This is a cross scheme strategy that allows funding to be spent effectively to maximise efficiencies and deal with any acceleration or delay to scheme progress.

8.2 FUNDING ARRANGEMENTS

8.2.1 The procurement strategy is sufficiently flexible by means of using work packages to ensure there is a degree of flexibility in the spend profile to meet local needs and draw down local funding as it comes forward.

8.2.2 The local authorities are also contributing a significant element of local funding to the schemes and as such the procurement strategy will effectively manage cost control and spend. This will be combined with the DfT funding to also ensure effective and efficient spend of government finance.

9 Contract Arrangements

9.1 KEY CONTRACT DATES

9.1.1 These are set out below in Table1.18.

Scheme	OJEU for all new contracts	Award all contracts by	On site	Completion
AVTM	June 12	Quarter 2 2013	Quarter 2 2013	Quarter 1 2015
NFHP	June 12	Quarter 2 2013	Quarter 1 2014	Quarter 3 2016
SBL	June 12	Quarter 2 2013	Quarter 3 2014	Quarter 4 2016

Table1.18: Key Contract Dates

9.1.2 These dates are very high level and a more detailed programme is included in Appendix B, which incorporates the packages and programme synergies which are described in Section 9.5.1.

9.2 KEY CLAUSES

9.2.1 The key clauses across all contracts are anticipated and not limited to the following:

- Maintenance liabilities and defects liabilities
- Risk of quantity changes
- Transfer of Employers risks
- Dealing with Price changes
- Incentive mechanism and link to Alliance Agreement
- Target Price ranges and ‘caps’
- NEC3 Z clauses
- Warranties and Insurances
- Environmental maintenance extended responsibilities

9.3 LENGTH OF EXISTING AND NEW CONTRACTS

Infrastructure

9.3.1 The existing contracts are listed in Appendix D.

9.3.2 The new contracts are as follows:

- Bristol City Council Term Contract for Highway Works is suggested as being for at least 8 years;
- D&B Infrastructure contracts will be 2 years to 3 years;
- D&B Structures Contract packages 1 to 4 years duration; and

- New frameworks for RTPI, CCTV, bus Shelters will be for at least 4 years.

Operations

9.3.3 Bus operations tendered services will have contracts for 3-5 years.

Ticketing

9.3.4 The current ITSO HOPS & CMS hosting contract runs until 2016 with the ability to extend and the current On-Bus POST and Retail POST Framework Contracts are available until 2016.

9.3.5 Contract Agreements with local operators will be in place from 2011 until late 2016/early 2017. With the change to the local authority tendered service contract conditions from 2012 the use of ITSO as the core interoperable platform will become steady state from late 2012 onwards.

9.3.6 The full Ticketing Strategy is included in Appendix E.

9.4 HR ISSUES

9.4.1 The proposed management structure for the infrastructure packages is shown under 9.6.1.

Infrastructure

9.4.2 There may be some TUPE issues when all the BCC contracts expire and a new contract is procured.

Operations and Ticketing

9.4.3 In relation to the Bus Operations and Ticketing Strategy there are no TUPE or Trade Union issues. For ticketing the Smartcard Board already has in place support contracts to oversee the introduction of new ITSO ticketing products for West of England partners. These will be built upon for the roll out of the Major Scheme requirements.

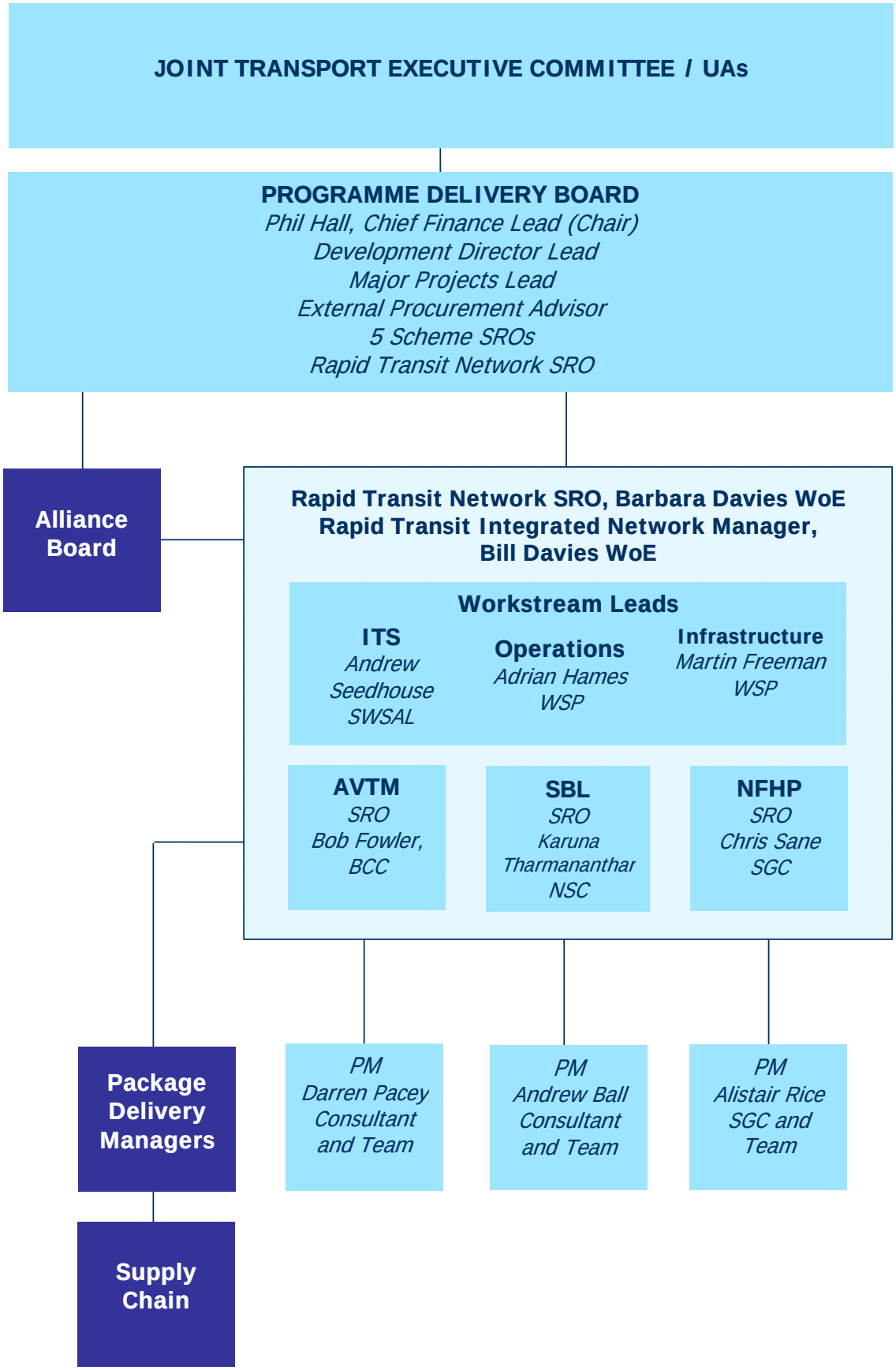
9.5 COMBINED PROGRAMME

9.5.1 The governance across all the programmes will be ‘marshalled’ by a lead Senior Responsible Owner in the Programme Delivery Board. A set of rules for use with existing packaged contracts and how they will be set and managed up by the Programme Delivery Board. The Programme is included in Appendix B.

9.6 CONTRACT MANAGEMENT

Overall Governance

9.6.1 The governance structure for the delivery of the schemes within the WoE area is shown below.


JOINT TRANSPORT EXECUTIVE COMMITTEE / UAs
PROGRAMME DELIVERY BOARD
Phil Hall, Chief Finance Lead (Chair)
Development Director Lead
Major Projects Lead
External Procurement Advisor
5 Scheme SROs
Rapid Transit Network SRO
Alliance Board
Rapid Transit Network SRO, Barbara Davies WoE
Rapid Transit Integrated Network Manager, Bill Davies WoE
Workstream Leads
ITS
Andrew Seedhouse SWSAL
Operations
Adrian Hames WSP
Infrastructure
Martin Freeman WSP
AVTM
SRO
Bob Fowler, BCC
SBL
SRO
Karuna Tharmananthar NSC
NFHP
SRO
Chris Sane SGC
Package Delivery Managers
PM
Darren Pacey Consultant and Team
PM
Andrew Ball Consultant and Team
PM
Alistair Rice SGC and Team
Supply Chain

Specific Management

9.6.2 The successful Contractor will be responsible for the construction of the scheme to budget and programme. The proposed NEC3 form of contract stimulates good management of the relationships between the parties to the contract. It is a clear and simple document, using language and structure which are straightforward and easily understood.

9.6.3 A key document of the NEC3 contract is the Accepted Programme for ECC contracts and the accepted Plan for terms service task Orders. This document is regularly updated and used as a management tool by both the contractor and the Project Manager/Service Manager to predict the delivery times of the scheme. This programme must contain not only details of construction sequence and information release, but also time risk and float allowances, giving a true picture of the critical path of the project.

9.6.4 All the contracts will be overseen by the Programme Delivery Board and the Alliance Board in order to manage change. Contracting parties must notify the other of any matter through an Early Warning, which could increase the prices, delay completion or impair the performance of the works in use. Contract management meetings are risk reduction meetings which will motivate both parties to identify problems as early as possible. It creates a proactive approach to finding a joint solution. Decisions and directions will be dealt with directly by the Programme Delivery Board through the appointed Project Managers/Service Managers and the successful contractor. There will also be a role for an NEC Supervisor whose role will be limited to ensuring completion of the construction works in accordance with the specified standards set down in the Works Information.

9.6.5 The contract will define Compensation Events and they will include instructed changes to the Works Information. The successful contractor will submit a quotation for the changes to both time and cost based on 'Defined Cost' which is the contractual term for actual cost. The Project Manager's acceptance of that quotation implements the change. This will enable the Project Manager to know the level of financial commitment usually before the works have started.

Operations and Ticketing

9.6.6 The QPS will coordinate and govern the bus operations quality aspects. The individual tendered arrangements will manage the services through the local authority.

9.6.7 The Smartcard Management Board will work with the Rapid Transit Network SRO to coordinate the delivery of the Ticketing Strategy on behalf of the Programme Delivery Board in accordance with the Major Scheme delivery timetable.

Appendices

Appendix A MCAT Appraisal Outcomes

Primary Objective	Sub Objectives
Programme / Time	Phasing Implications, can all three programmes be delivered with their individual timing constraints across one integrated programme? Does the potential procurement strategy hinder this?
	Potential for synergies across programme, for example can ticketing systems be developed as one system across all three schemes.
	With individual and cross programme interfaces to manage, what are the implications on management of multiple contracts versus consortium management?
	Deliver on Time. Fundamental
Cost	Lowest Whole life Cost, D&B versus in-house or bought in design, which strategy delivers lowest whole life cost, consider design life and maintenance frequency and asset condition. Pfi and DBFO models can deliver diminishing whole life costs versus package approach.
	Affordable best value – Can the available budget deliver the objectives of the scheme
	Incentivisation – which strategy will stop price escalation and reward performance and delivery?
	On-going cost – maintenance costs should be considered, which enables this, should it be part of the services contract? What provisions for warranties for systems and infrastructure maintenance periods will best sit with each strategy.
	Revenue – for services and ticketing systems if non pfi and DBFO.
	Lowest Capital Cost – at the expense of maintenance free years?
	Price certainty and reducing cost escalation – pricing for risk or pricing for partnership and reward?
Risk	Dovetailing of infrastructure, hardware and services contracts together. They must all be delivered concurrently without delays to individual strands.
	Managing risks – who is best placed to manage them and which strategy gives transparency and ownership?
	Ride Quality, serving needs of users, quality and image of the RTS. Which strategy will manage these objectives?
	Interfaces with Network Rail and the HA
	Interrelationships and contract complexities . More contracts means more relationships and contract management, consider for each strategy.
	Ticketing systems. One system that is procured across all packages
	Seamless public perception. Although potential for differing procurement arrangements across LA's, this must not effect public user perception of a seamless service, standardisation is paramount.

Procurement Strategies

Procurement Vehicle	Characteristics	Possible Forms of Contract
1. PFi	PFi is used to deliver services only after rigorous assessment has shown that it will provide better value for money compared to traditional public sector investment. PFI allows the public sector to contract with the private sector to provide quality services on a long-term basis, typically 25-30 years, so as to take advantage of private sector infrastructure delivery and service management skills, incentivised by having private finance at risk. The private sector takes on the responsibility for providing a public service against an agreed specification of required outputs prepared by the public sector. The private sector carries the responsibility and risks for designing, financing, enhancing or constructing, maintaining and operating the infrastructure assets to deliver the public service in accordance with the public sector's output specification. The public sector typically pays for the project through a series of performance or throughput related payments, which cover service delivery and return on investment. Central Government may provide payment support to the public sector through grants and other financial mechanisms.	Bespoke schedules drawn up to HMT guidelines, complex and very lengthy time frame to agree.
2. DBFO	Design, Build, Finance and Operate. A contract whereby one company undertakes a contract to perform these things for the length of the concession, often 25 or 30 years. Payment mechanism is tied to numbers of vehicles in the operator area.	Bespoke schedules drawn up to HMT guidelines, complex and very lengthy time to agree. Charging mechanism per

		vehicle can be a risk, many variables to consider.
3. Competition: Separate Contracts	This separate package strategy assumes that all the contracts that are required are tendered as new contracts and will be let separately. There will be a mix of traditional design and project management services contracts let for each of the schemes. Infrastructure contracts will be traditional, the design will be completed before they are tendered, and they will be fully specified and tendered competitively to contractors. Shelters will be competitively let. There will be specialist Design and Build contracts competitively let for Structures. The Hardware contracts for CCTV, ITS (signalling and ducting), RTPI, and Ticketing will be let by competition. There is no allowance for Early Contractor Involvement. Several OJEU contract Notices will need to be placed over an approximate two year period. The separate local Authorities will be managing all of the separate contracts. Each contract is unique and not linked to programme performance. The separate contracts can be incentivised.	NEC3 ECC, PSC, LA T&C's for hardware contracts and shelters.
4. Hybrid: Existing Procurement Routes combined for all three RTS schemes (supplemented by competition for specific or higher value/risk areas)	It is a packaged strategy which uses existing maintenance contracts within current LA jurisdictions and cross LA procurement arrangements (and their future replacements) for Hardware. The current 'Streetcare' service for Infrastructure on NFHP and the HM&MI contract for the AVTM City Centre Loop. Design and Project Management services also using cross LA arrangements.	Terms that the existing maintenance/minor works contracts are on, NEC3 ECC, PSC, LA T&C's with hardware suppliers. Incorporating D&B terms for specialist

	For infrastructure, phased competitively let contracts covering all three schemes. For the specialist structures D&B separately let contracts across each of the schemes. Network Rail manages and let their own contracts for rail bridges, payment made by the Client. Highways Agency manage and use their own contracts for the works on NFHP. WoE, Programme Delivery Board manage the separate contracts across all the schemes. Each contract is unique and not linked to programme performance. Separate contracts can be incentivised.	structure's contracts.
5. ECI Contract: JV/Alliance Manages their own supply chain to deliver all design, PM, works and hardware.	One OJEU Contract Notice is placed for an ECI contract at an early stage of scheme development. The procurement involves the assessment of quality and a 'budget commentary' which matches the suppliers' prediction of cost to that of the client and is assessed accordingly. The successful organisation would have design, PM and construction expertise available and would normally be made up of a contractor, designer and hardware specialist. This procurement vehicle would deliver all the schemes over the five year period and one bespoke set of contract conditions deals with all aspects of Design, Hardware and Construction. The design will progress once the organisation is appointed. The design work is carried out on a cost reimbursable basis. The construction work is on a target price basis. Incentives can be applied across the RTS programme, targets and performance indicators can be applied. Partnering contract can be used. WoE, Programme Delivery Board manages the ECI Contractor.	Specific ECI terms based on NEC3 ECC covering design and construction and hardware. ECC sub contract form and specific JV terms for suppliers.

6. Traditional Framework (Lots).	One OJEU Contract Notice is placed for a Framework contract. The framework is split into 'lots' for each of the work strands. One procurement process would derive one or more suppliers in each Lot. A defined selection process would be in place to select contractors after the Framework was let, to satisfy the Remedies Act and the Public Procurement Contract Regulations. Incentives and a partnering clause can be put in place with all Framework suppliers so they are incentivised to deliver the combined RTS programme over four years. A Framework Board made up of all the framework delivery partners can be set up to align with the WoE Programme Delivery Board. This would allow early design development and value management from all members of the framework.	NEC3 Overarching Framework Contract comprising of ECC, PSC, TSC, LA specific for supply contracts where appropriate.
7. Incentivised Alliance	This is using the principles from 4 but creating an Alliance Charter with a partnering clause tying all suppliers into an incentive mechanism which makes them all responsible for delivering the RTS programme. Good performance is rewarded, poor performance is not.	Terms that the existing maintenance/minor works contracts are on, NEC3 ECC, PSC, LA T&C's with hardware suppliers. Incorporating D&B terms for specialist structure's contracts. Overarching Partnering Agreement

8. Management Contractor	One contract is entered into with an organisation and it is the responsibility of that organisation to provide all the design, construction and hardware. The management contractor will be responsible for all procurement and enter into contracts with a supply chain. The risk lies with the management contractor but will be provided at a premium. The client does not have much control and can be susceptible to delay and cost escalation if the management contractor does not manage the programme effectively with the supply chain.	NEC3 Management Contract – with separate contracts with Management Contractor for design, infrastructure, structures, hardware,

Criteria and Weighting

Jump to Instructions

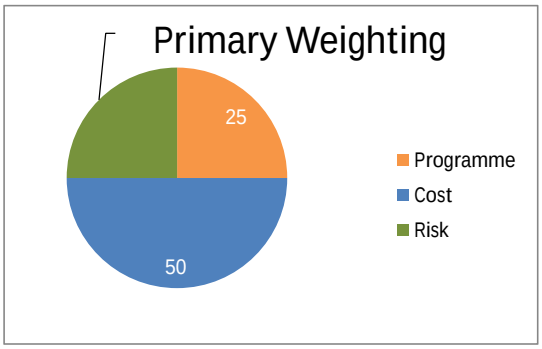
Criteria and Weighting

Initial assumptions on measures and their weighting

General

How important are the three main criteria of **Programme, cost and risk** compared with each other?

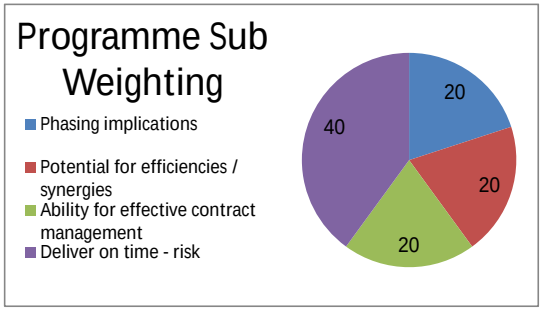
Programme	25	%
Cost	50	%
Risk	25	%
Total	100	%



Programme

The following **Programme** sub objectives were considered during this assessment:

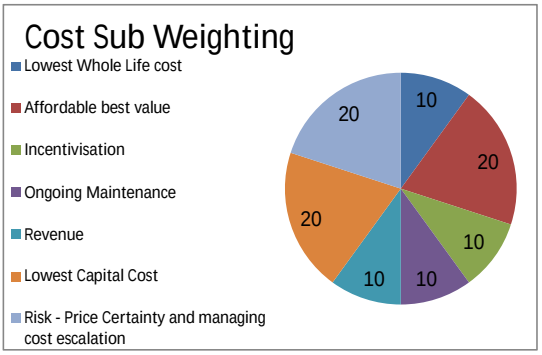
Phasing implications	20	%
Potential for efficiencies / synergies	20	%
Ability for effective contract management	20	%
Deliver on time - risk	40	
Total	100	%



Cost

The following **Cost** sub headings were considered during this assessment:

Lowest Whole Life cost	10	%
Affordable best value	20	%
Incentivisation	10	%
Ongoing Maintenance	10	%
Revenue	10	%
Lowest Capital Cost	20	%
Risk - Price Certainty and managing cost escalation	20	%
Total	100	%



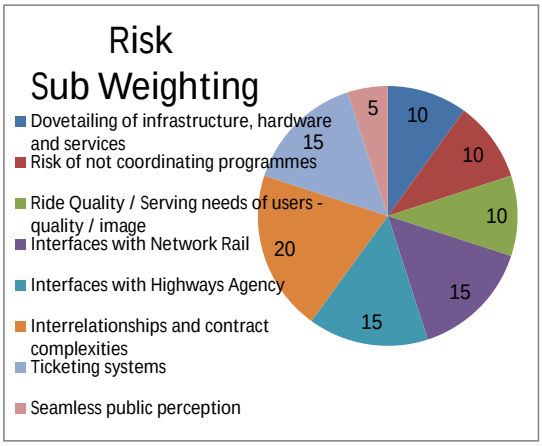
Criteria and Weighting

Jump to Instructions

Risk

The following **Risk** sub headings were considered during this assessment:

Dovetailing of infrastructure, hardware and services	10	%
Risk of not coordinating programmes	10	%
Ride Quality / Serving needs of users - quality / image	10	%
Interfaces with Network Rail	15	%
Interfaces with Highways Agency	15	%
Interrelationships and contract complexities	20	%
Ticketing systems	15	%
Seamless public perception	5	%
Total	100	%



Overall Weighting

Programme

Phasing implications	5.0
Potential for efficiencies / synergies	5.0
Ability for effective contract management	5.0
Deliver on time - risk	10.0

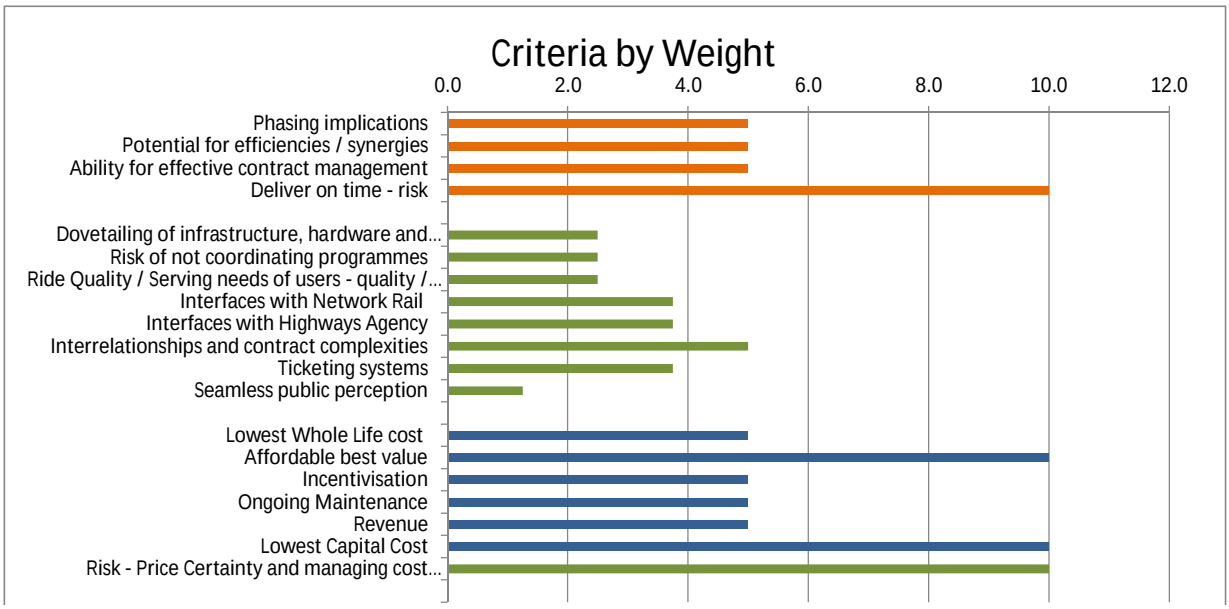
Cost

Lowest Whole Life cost	5.0
Affordable best value	10.0
Incentivisation	5.0
Ongoing Maintenance	5.0
Revenue	5.0
Lowest Capital Cost	10.0
Risk - Price Certainty and managing cost	10.0

Risk

Dovetailing of infrastructure, hardware and services	2.5
Risk of not coordinating programmes	2.5
Ride Quality / Serving needs of users - quality / image	2.5
Interfaces with Network Rail	3.8
Interfaces with Highways Agency	3.8
Interrelationships and contract complexities	5.0
Ticketing systems	3.8
Seamless public perception	1.3

TOTAL 100.0



Measure Scoring

Jump to Instructions

			Programme				Cost							Quality								
	ID	Description	Phasing implications	Potential for efficiencies / synergies	Ability for effective contract management	Deliver on time - risk	Lowest Whole Life cost	Affordable best value	Incentivisation	Ongoing Maintenance	Revenue	Lowest Capital Cost	Risk - Price Certainty and managing cost escalation	Dovetailing of infrastructure, hardware and services	Risk of not coordinating programmes	Ride Quality / Serving needs of users - quality / image	Interfaces with Network Rail	Interrelationships and contract complexities	Ticketing systems	Seamless public perception	Interfaces with Highways Agency	Rank
Infrastructure Procurement Options	1	PFi	-2	-1	-2	-2	-1	-2	0	2	0	-3	3	2	-1	1	-1	0	-1	0	-1	**7**
	2	DBFO	-2	-1	-2	-2	-1	-1	0	2	0	-3	2	2	-1	1	-1	0	-1	0	-1	**6**
	3	Competition Separate Contracts	-2	-2	-2	-1	-1	-1	-3	-2	0	1	-2	-3	-3	1	1	-3	1	-3	1	**8**
	4	Hybrid - using existing contracts and competition for high risk contracts	1	2	2	0	1	1	1	2	0	2	-1	2	2	2	1	-1	1	0	1	**1**
	5	Alliance	0	3	2	0	1	0	2	0	0	2	1	2	1	2	1	0	1	1	1	**2**
	6	ECI Contract	-1	3	0	1	-2	-2	1	-1	0	-2	-3	2	-1	0	1	1	1	0	1	**4**
	7	Framework (Lots)	0	2	-1	-1	1	1	2	-1	0	1	-1	2	-1	2	1	-1	1	0	1	**3**
	8	Management Contractor	-2	-1	0	1	-2	-2	0	-2	0	-2	-3	2	2	-2	1	-2	1	1	1	**5**
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Criteria and Weighting

Jump to Instructions

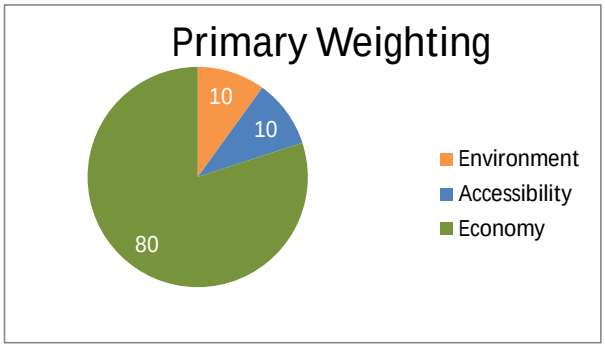
Criteria and Weighting

Initial assumptions on measures and their weighting

General

How important are the three main criteria of **Environment, Accessibility & Economy** compared with each other?

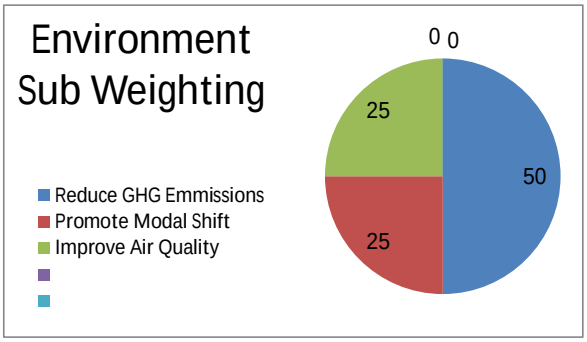
Environment	10	%
Accessibility	10	%
Economy	80	%
Total	100	%



Environment

The following **Environment** sub objectives were considered during this assessment:

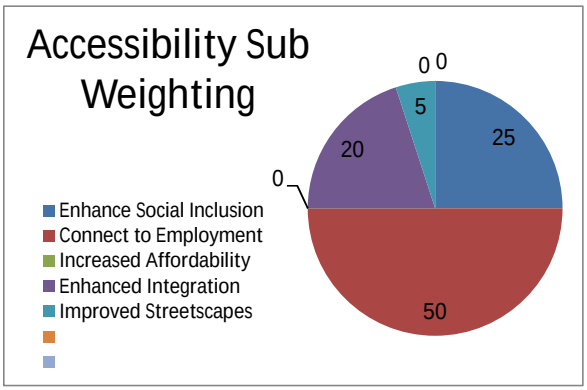
Reduce GHG Emmissions	50	%
Promote Modal Shift	25	%
Improve Air Quality	25	%
		%
		%
Total	100	%



Accessibility

The following **Accessibility sub objectives** were considered during this assessment:

Enhance Social Inclusion	25	%
Connect to Employment	50	%
Increased Affordability	0	%
Enhanced Integration	20	%
Improved Streetscapes	5	%
		%
		%
Total	100	%



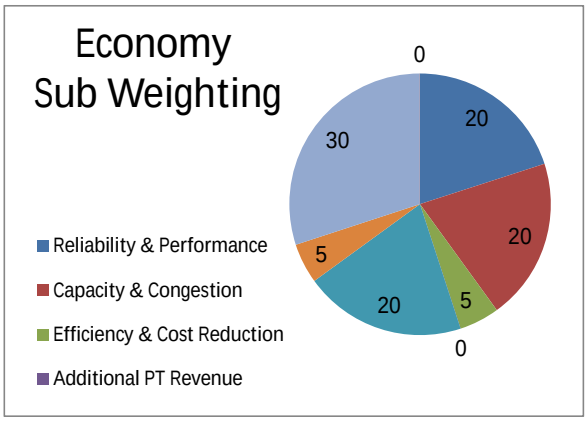
Criteria and Weighting

Jump to Instructions

Economy

The following **Economy** sub objectives were considered during this assessment:

Reliability & Performance	20 %
Capacity & Congestion	20 %
Efficiency & Cost Reduction	5 %
Additional PT Revenue	0 %
Support Sustainable Development	20 %
Reduce Public Sector Risk (Finance/Rep)	5 %
Deliverability	30 %
	%
Total	100 %



Overall Weighting

Environment

Reduce GHG Emmissions	5.0
Promote Modal Shift	2.5
Improve Air Quality	2.5
N/A	
N/A	

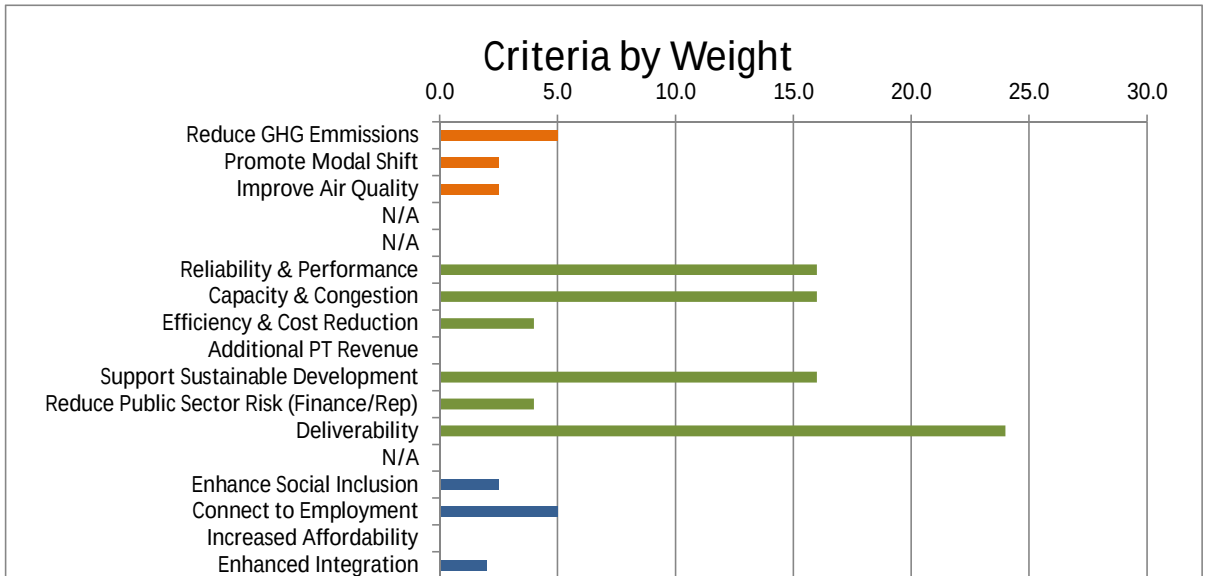
Economy

Reliability & Performance	16.0
Capacity & Congestion	16.0
Efficiency & Cost Reduction	4.0
Additional PT Revenue	0.0
Support Sustainable Development	16.0
Reduce Public Sector Risk (Finance/Rep)	4.0
Deliverability	24.0
N/A	

Accessibility

Enhance Social Inclusion	2.5
Connect to Employment	5.0
Increased Affordability	0.0
Enhanced Integration	2.0
Improved Streetscapes	0.5
N/A	
N/A	

TOTAL 100.0



Measure Scoring

Jump to Instructions

List of procurement options

Bus Operations Procurement Options

			Environment					Accessibility							Economy									
	ID	Description	Reduce GHG Emmissions	Promote Modal Shift	Improve Air Quality	N/A	N/A	Enhance Social Inclusion	Connect to Employment	Increased Affordability	Enhanced Integration	Improved Streetscapes	N/A	N/A	Reliability & Performance	Capacity & Congestion	Efficiency & Cost Reduction	Additional PT Revenue	Support Sustainable Development	Reduce Public Sector Risk (Finance/Rep)	Deliverability	N/A	**Rank**
	1	Open Access	-1	0	0	0	0	0	0	-1	-1	0	0	0	0	-1	1	-1	0	2	3	0	**6**
	2	Tendered Services	3	3	3	0	0	3	3	3	3	0	0	0	3	3	2	2	3	-3	-2	0	**3**
	3	Voluntary Agreements	2	2	2	0	0	2	2	2	2	0	0	0	2	2	0	0	2	-3	1	0	**4**
	4	Qualifying Agreements	1	-1	1	0	0	0	0	0	1	0	0	0	-1	-1	2	0	0	2	1	0	**7**
	5	Quality Partnership Schemes	3	3	3	0	0	2	2	3	2	1	0	0	3	3	2	2	3	-1	-1	0	**2**
	6	QPS with Tendered Services	3	3	3	0	0	3	3	3	3	1	0	0	3	3	2	2	3	-1	-1	0	**1**
	7	Quality Contract Schemes	3	3	3	0	0	3	3	3	3	1	0	0	3	3	2	2	3	-3	-3	0	**5**

Measure Scoring

Jump to Instructions

List of procurement options

AVTM&SBL Bus Operations Procurement O

		Environment			Accessibility					Economy							
ID	Description	Reduce GHG Emmissions	Promote Modal Shift	Improve Air Quality	Enhance Social Inclusion	Connect to Employment	Increased Affordability	Enhanced Integration	Improved Streetscapes	Reliability & Performance	Capacity & Congestion	Efficiency & Cost Reduction	Additional PT Revenue	Support Sustainable Development	Reduce Public Sector Risk (Finance/Rep)	Deliverability	**Rank**
1	Open Access	-1	0	0	0	0	-1	-1	0	-2	-1	-1	-1	0	2	1	**7**
2	Tendered Services	3	3	3	3	3	3	3	0	3	3	2	3	3	-2	1	**1**
3	Voluntary Agreements	2	2	2	2	2	2	2	0	-1	2	-1	-1	2	-3	1	**5**
4	Qualifying Agreements	1	-1	1	0	0	0	1	0	-1	-1	1	0	0	1	1	**6**
5	Quality Partnership Schemes	3	3	3	2	2	3	2	1	1	2	1	1	3	-1	-1	**4**
6	QPS with Tendered Services	3	3	3	3	3	3	3	1	3	3	2	2	3	-1	-1	**2**
7	Quality Contract Schemes	3	3	3	3	3	3	3	1	3	3	2	2	3	-3	-3	**3**

Measure Scoring

Jump to Instructions

List of procurement options

NFH Bus Operations Procurement Options

			Environment			Accessibility					Economy								
	ID	Description	Reduce GHG Emmissions	Promote Modal Shift	Improve Air Quality	Enhance Social Inclusion	Connect to Employment	Increased Affordability	Enhanced Integration	Improved Streetscapes	Reliability & Performance	Capacity & Congestion	Efficiency & Cost Reduction	Additional PT Revenue	Support Sustainable Development	Reduce Public Sector Risk (Finance/Rep)	Deliverability	**Rank**
	1	Open Access	-1	0	0	0	0	-1	-1	0	0	-1	1	-1	0	3	3	**6**
	2	Tendered Services	3	3	3	3	3	3	3	0	3	3	1	2	3	-3	-3	**5**
	3	Voluntary Agreements	2	2	2	2	2	2	2	0	2	2	0	0	2	-2	1	**3**
	4	Qualifying Agreements	1	-1	1	0	0	0	1	0	-1	-1	2	0	0	2	1	**7**
	5	Quality Partnership Schemes	3	3	3	2	2	3	2	1	3	3	2	2	3	-1	-1	**1**
	6	QPS with Tendered Services	3	3	3	3	3	3	3	1	3	3	2	1	3	-3	-2	**2**
	7	Quality Contract Schemes	3	3	3	3	3	3	3	1	3	3	2	2	3	-3	-3	**4**

Appendix B Programme and Cost Analysis

🟦 AVTM

🟩 SBL

🟥 NFH

Cost versus Programme Synergy Exercise

		2011				2012												2013												2014												2015												2016												
		9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	Total Costs
Design	AVTM	🟦 £1,288,000	🟦	🟦	🟦																																																											£1,288,000
	SBL																														🟩 £1,400,000	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩																											£1,400,000
	NFH					🟥 £2,700,000	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥																																															£2,700,000
Main Works	NFH M32 Junction																																🟥 £13,139,524	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥																			£13,139,524
	NFH City Centre																																🟥 £7,111,380	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥																£7,111,380
	NFH On-Street (N)																														🟥 £22,660,987	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥						
	NFH On-Street (S)																																🟥 £8,395,753	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥						£8,395,753
	AVTM																			🟦 £9,600,225	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦																									£9,600,225
	AVTM City Centre Loop																							🟦 £4,140,546	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦																									£4,140,546
	SBL																																						🟩 £18,836,006	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩			£18,836,006
Structures	SGTL Stream																																			🟥 £2,025,000	🟥	🟥	🟥	🟥	🟥																											£2,025,000
	East Link Structures																														🟥 £2,362,500	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥																									£2,362,500
	New Cut																																																🟥 £3,510,000	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥							£3,510,000
	Prince Street																						🟦 £1,350,000	🟦	🟦	🟦	🟦	🟦																																										£1,350,000
	Ashton Swing																						🟦 £1,350,000	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦																																						£1,350,000
	Stadium, Vauxhall, Cumberland Rd Structures																						🟦 £3,253,500	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦																																						
	SBL Various Structures																						🟩 £708,000	🟩	🟩	🟩	🟩	🟩	🟩	🟩																																										£708,000
NR Bridges	SGTL Rail																																				🟥 £2,565,000	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟥																			£2,565,000
	Portishead Rail																								🟦 £5,805,000	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦																																			£5,805,000
	SBL Rail Bridge																																												🟩 £6,006,000	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩											£6,006,000

Appendix C Risks Aligned

WEP Schemes Common Risks

Common Risks Identified in Green	
Weston Package Top Risks	Mitigation
Shortage of Council Funding for WP1 prep/design costs	Reports to the North Somerset Executive on major scheme funding to prioritise funding demands within the programme.
Non-approval of detailed design by the Highways Agency	Liaise with HA over specific design standards and requirements. Build into design at an early stage.
Poor performance of Transport Term Consultants (Halcrow and Atkins)	Halcrow contract manager working one day per week in H&T. Also additional MSBC-experienced Halcrow staff brought into the project
Inadequate project management effort/attention provided to complex project - DELAY and PM COST	Regular review of project management resources, control and roles/responsibilities
Stakeholder engagement raises issues that need addressing - DELAY and PM COST (excluding statutory, members, public as elsewhere)	Continue engagement with stakeholders and other suitable fora
Bid not accepted by DfT (not a compliant bid or additional queries) - DELAY and PM COST	Continue current approach of following guidance and keeping DfT informed through regular liaison meetings
Change in transport legislation / policy or approach by DfT or other Government Departments	Review implications as new requirements become evident. Submit before Apr 09 to avoid mandatory changes
Lack of Member support for the project - DELAY and PM COST	Ongoing and regular dialogue with the Executive Member. Workshop with all Members invited.
Not obtaining support/consents from public transport stakeholders (i.e. Network Rail, public transport operators) - DELAY and PM COST	Continue dialogue and seek written support from public transport stakeholders
Not obtaining support/consent from statutory consultees (e.g. HA, EA, EN) - DELAY and PM COST	Contact all statutory consultees and seek written support for the bids. Continue meetings with HA
Lack of public / media support for project - DELAY and PM COST	Further bespoke public consultation on Package elements as the project progresses.
Changes of the Package composition and/or individual scheme elements - DELAY and PM COST	Detail design and costing of Package components.
Unreliable scheme construction cost estimates (other than inflation)	Work up scheme details - to ensure that the estimates are as accurate as possible, use QA review positively.
Cost inflation either lower or higher than anticipated	Ensure robust allowance for possible inflation in cost estimates
AVTM Top Risks	Mitigation
Adverse press coverage creates negative feeling towards the scheme which impacts on Members	Proactive media management Regular briefing of Members
BCFC design incompatability	Integrated design with developer continued negotiation on development planning conditions
Scheme not awarded Programme Entry status	Regular briefing of Members Strategy of communications with Govt
Lack of clarity in procurement approach	Agree approach with WoE on scheme specific and programme level
BCFC design incompatability	Integrated design with developer continued negotiation on development planning conditions
Abortive costs may be incurred in the event reactivated Programme Entry not achieved	Sound Cost Management Prioritisation of key activities Engagement with DfT
Inability to continue scheme development work while awaiting SoS approval	Identify and secure current and future year funding with UAs
Project requirements are not protected through development control and negotiations with developers	Close engagement with UAs and developers Third party agreements
BCFC application approved but delivery delayed	Consider with development/delayed development scenario in project planning Appraisal of programme scenarios in ES Third party agreement with developer
BCFC appeal TVG SoS decision which affects timely delivery of inspectors report and BRT scheme progress	Maintain dialogue with BCFC Ensure ongoing legal advice Present robust Public Inquiry Case
Tender price exceeds cost estimate	Robust major scheme bid Strict change control processes independent review of costs
Contractor fails to keep to programme leading to late completion	Contractual commitment with contractor and penalty clauses
Technical problems with structural / civil works come to light during construction	Ensure appropriate provision made in scheme cost estimate (QRA) Contractual transfer of risk to contractor Independent review of cost allowances Progress detailed design work on high risk items
P&R service continuity until scheme start date	Amend current contracts of P&R
SBL Top Risks	Mitigation
Compensation claims after the event that will have to be funded by Local Authorities - Part 1 Claims.	Contingency funds. Noise attenuation measures.
Failure to secure planning permissions from the councils within 16 weeks	Early discussion and close contact with Planners. Pre-application advice. Planning Performance Agreement
Application for Village Green Status	Seeking legal advise
Scheme crosses (goes under) a main rail line - increased costs and delays.	Works costs determined Early discussion with Network Rail.
Local political uncertainty across both authorities may result in changes in priorities.	Undertake programming with political cycles in mind. Keep Members informed.
If the proposed alignment through the Common Land and associated exchange land package is not accepted by the Secretary of State, there would need to be additional engineering design work	Early design review and commencement of orders process Following the communication plan. Consulting with those who are them opposed to the scheme at appropriate stages in the design work. Early involvement with contractors.
Physical delays in the construction phase - demonstrators etc.	Site security. Early liaison with Police. Sound project management and planning processes. Thorough design.
Worse contaminated ground conditions encountered than anticipated - delay to works completion and additional mitigation costs.	Commission an early ground condition survey along proposed route.
Delay in diversion of utilities	Early engagement with utility companies. Transfer risk to Contractor to encourage continued engagement.
NFH Top Risks	Mitigation
Delay in DfT Approval	Regular engagement with DfT Compliant and High Quality MSBC submission
Failure to secure powers	Robust Technical Case, early confirmation of delivery mechanism
Submission of TWAO and/or planning applications delayed	Appropriate resources, political support, technical work
Developer funding not secured	Early negotiations and LA underwriting
Delay to complementary development measures	Early agreements with developers
Capital costs esculate resulting in failure to secure DfT funding/overspend	Strict change control and robust major scheme bid
Contractor fails to keep to programme leading to late completion	Contractual commitment with contractor and penalty clauses
Approvals from HA and NR	Engagement
Doormice on UWE link from M32	Early ecology work
Traffic Management and disrupting travelling public	Coordinate works

Appendix D Existing Frameworks / Contracts

Authority	BEPS no	Title	Contractors	Term	OJEU Contract Notice Value	Contract Conditions	New Contract Strategy Yes/No
Bristol City Council	10	Traffic Signals Maintenance & Installation	Siemens	31st March 2013 (OJEU contract)	£12 million	ICE 5th	
	1306	Machine Laid Surfacing	CEMEX	March 2010 but BCC offering extension until March 2012	£850k		
	1313	Highway Maintenance & Minor Improvements	Carillion, ETM, Alun Griffiths & others	31-Mar-13	£2 million		
	1315	Highway Maintenance & Minor Improvements CORE CONTRACT	Carillion Highway Maintenance Ltd	31-Jul-03	£8.5 million		
	1325	Surface Dressing	South Glos	March 2010 but BCC offering extension until March 2012	£370k		
		Specialist Surface Treatments	JPCS, Kelly Brothers, Kielys	31-Mar-12	£250k		
		Road Markings	Kelly Brothers	31-Mar-12	£250k		
		Maintenance and Constructional Improvements to Watercourses and Associated Structures	ER Hemmings Ltd Marton Civil Engineering Ltd Hammond ECS Ltd Britannia Construction Ltd Alun Griffiths (Contractors) Ltd	31-Aug-12	£150k	NEC3	
		Traffic Management	Forest, Carillion	31-Mar-12	£50k		
		Maintenance and installation ofRroad Lighting	SSE Contracting	31-Jul-15	£11 million		
	1183	Minor Highway and Assocaited Works	Alun Griffiths, Balfour Beatty, Carillion HM, Clancy Dowcra, ER Hemmings, ETM Contracts, Lafarge, south Glos Civil eng, Laser (Volker)	31-Mar-12	£5 million	ICE 6th	
South Gloucester		'Streetcare'	Lafarge	?	?	?	
		Surfacing and quarried materials	Lafarge	5 + 2 2017	£24.5 million	NEC 3	N/A
		Footway Slurry Seal	Eurovia	5 + 2 2017	£105k	NEC 3	N/A
		Traffic Signals Maintenance &Installation					
		Specialist Surfacing inc Micro, HFS, Coloured	Eurovia	5 + 2 2017	£102k	NEC 3	N/A
		Traffic Management	Forest	5 + 2 2017	£231k	NEC 3	N/A
		Sign Manufacture	Carillion	5 + 2 2017	£560k	NEC 3	N/A
		Labour and gang Framework	Various	4 2015	n/a	NEC 3	N/A
		Framework/contract for Structures?	ER Hemmings Ltd Marton Civil Engineering Ltd Hammond ECS Ltd Britannia Construction Ltd Alun Griffiths (Contractors) Ltd	1st April 2010 to 31st March 2012	N/A	ICE 7th ed	Not Yet
North Somerset	10	Traffic signals & ITS Installation and Maintenance Work	Siemens	Joint contract started in 2003. Ends 31st March 2013	Revenue £123k, Capital £64k. Also used for GBBN, Weston Package and other schemes that differ in value from year to year	ICE 5th	Yes intend to continue. B&NES have indicated they may join
		Term Contract for Transport Consultancy Services	Halcrow	30th September 2012 4yrs +2	£800k Indicative	NEC3 TSC	Not sure
	1183	Framework Agreement for Minor Highways & Associated Works	BLOGGS & CO	Last contract 31st March 2012 (OJEU)	£2 million	NEC3 TSC	No
		Highway Maintenance & Improvement Works	Balfour Beatty	31st March 2014	Indicative amounts offered for each work area. Contract states max £250k per scheme	ICE Term Version 1st Edition	Yes
	1306	Surfacing					
		Shelters		As part of GBBN			
		RTPI		As part of GBBN			
		CCTV - Maintenance only	Select Electrics	3 yrs until 31st March 2012	Not OJEU, £64k	Council's own contract	Yes and will look to include supply as well
		Street Lighting Traffic Management Decorative Lighting Maintenance Contract	Scottish & Southern Electric	2009 for 5yrs to 31st March 2014 but with option to extend +2 and further +2	Revenue £755,770, Capital £550k	ICE Term Version amended 2007	Yes

Appendix E Ticketing Strategy

Ticketing Strategy For Rapid Transit Major Scheme
Commercial & Procurement Work Stream

1. Ticketing Strategy Overview

1.1. This work package builds upon preparation undertaken by WSP and North Somerset Council in identifying a ticketing strategy that is fit for purpose for rapid transit, but which also accommodates and does not place a new cost burden upon existing and future commercial and tendered bus services within the Major Scheme area.

1.2. The proposal is scalable and based upon optimising off vehicle transactions, with the capability of expansion to include future services and growth of the Rapid Transit Network. It seeks to take into account rapid transit vehicle types with limited driver interactions, and the need to promote journey speed and reliability through minimising bus stop dwell times.

1.3. Whilst a range of options were considered, the preferred option is for a dual ITSO smartcard and EMV contactless card reader to be available on any Rapid Transit Vehicle operating along one of the core corridors. These On-Vehicle Point of Sale Terminals (POST's) will be supported by on-street retail machines at key passenger interchange locations and an EMV/ITSO reader at all stops on the Rapid Transit Service routes. This core infrastructure will be further supported by a customer friendly online retail site for product, card, and customer transaction management.

1.4. It is optimal for the Major Scheme routes as it will deliver a ticketing system which retains the full ability to support ITSO smartcard product and E-purse interoperability, with the convenience of EMV as a payment and ticketing process where the user travels on a single operator and wishes to pay using an EMV platform. Through utilising Bus Stop based tap on and tap off facilities rather than on vehicle, it will deliver a reduction in boarding times for all Rapid Transit Vehicle routes, whilst supporting interoperability with other bus operators along the routes. The functionality proposed is similar to that being rolled out from late 2012 in London as a replacement for Oyster, but enhanced to reflect the commercial operational nature of the majority of bus services in the Major Scheme area.

2. The Technology Behind the Strategy

2.1. What is ITSO

ITSO is a Government-backed organisation which defines and develops the UK-wide technical specification for smart ticketing. Its aim is make rail and bus travel throughout the UK seamless and hassle-free. The ITSO Specification sets a common technical standard against which suppliers certify their ticketing system products, to provide an operating environment for transport operators and local authorities throughout the UK to be able to deliver interoperable ticketing and E-Money products so passengers only have to use one secure payment 'smart' card no matter what bus, train or route they are using.

The ITSO Specification covers all core components of the ticketing supply chain including Card Media, On-Vehicle Point of Sale Terminals (POSTs), Back Office Systems (HOPS) and On-street Vending Devices (Retail POSTS). At present there are around 14m ITSO smartcards operational in the UK, with all buses in Wales and Scotland already equipped with ITSO Readers. All local authority Concessionary Travel Cards are already ITSO, and operating an area wide ITSO technical platform is already a core priority being realised by the West of England local authority Major Scheme partners.

Partners in the Major Scheme area have already invested in a joint ITSO back office HOPS system and will have completed the roll out of ITSO On-Vehicle POSTs on all vehicles in the West of England area by the summer of 2012, providing a stable, core, interoperable technological platform from which the ticketing requirements of these Major Scheme routes can be accommodated.

2.2. What is EMV

EMV stands for 'Europay, MasterCard and VISA', a global standard for the inter-operation of contact and contactless credit and debit account transactions. The EMV standards define the interaction at the physical, electrical, data and application levels between cards and card processing devices for financial transactions. The standard for contactless cards is based on ISO/IEC 14443.

Such contactless payment systems can be credit cards and debit cards, key fobs, mobile phones, smartcards or other devices which use Radio Frequency Identification (RFID) for making secure payments. The embedded chip and antenna enable consumers to wave their card or fob over a reader at the point of sale, to deliver transactions which can be almost twice as fast as a conventional cash purchase on bus. Because no signature or PIN entry is typically required for purchases under £15 in the UK, it is ideal for the small scale payments are required on buses.

The first EMV contactless cards in the UK were issued by Barclaycard in 2008. As of June 2010 there are approximately 9.6 million contactless-enabled cards, representing 7% of all cards. Major financial entities now offering contactless payment systems include MasterCard, Citibank, JPMorgan Chase, American Express, KeyBank, Barclays, Barclaycard and HSBC. Visa PayWave and Mastercard PayPass are examples of contactless credit cards which are becoming widespread in the UK.

Whilst not delivering interoperable ticketing products for the Major Scheme Ticketing Strategy, EMV is seen as a fast and effective way of paying for travel in a single operator environment for passengers who do not wish to have a smartcard. Users will use their existing EMV RFID device (debit card/key fob /phone) to tap on when boarding a vehicle and tap off when they leave. The payment is calculated retrospectively based on usage by the back office system at the end of the day. It provides a complementary solution to the ITSO platform.

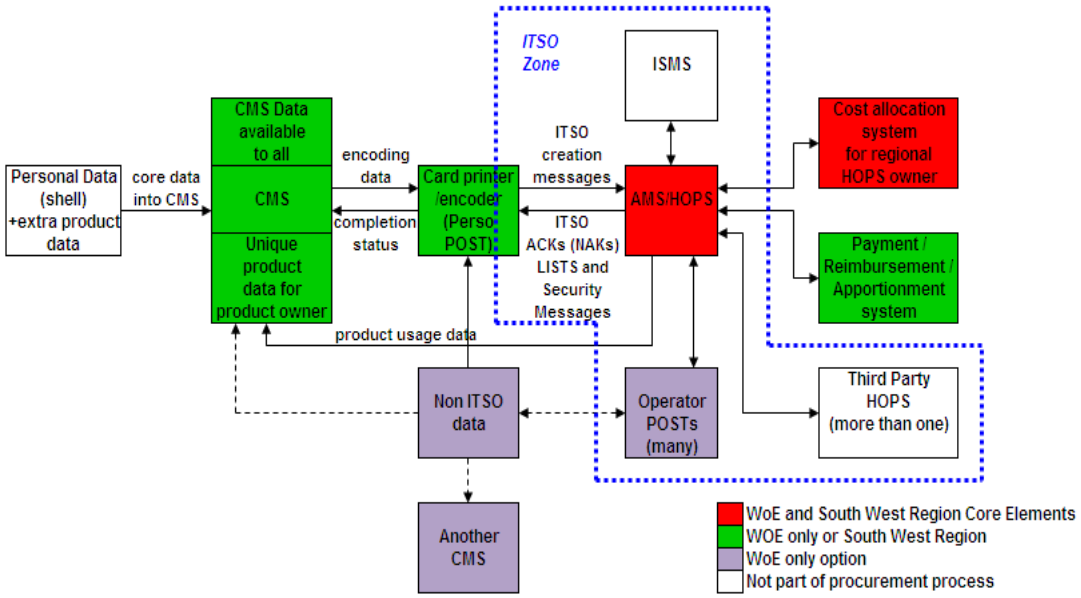
2.3 By utilising a combination of both ITSO for interoperable ticketing products and smartcard payments via an E-Purse, with the convenience of EMV for single operator journey payment, the Strategy will provide the best solution for maximizing off bus transactions and reducing bus stop dwell times. This will therefore support faster and more reliable journey times which are core components of the overall Major Scheme Strategy.

3. Delivering the Ticketing Strategy

3.1. The West of England local authority Major Scheme partners have already procured an operational ITSO Smartcard back office (HOPS) system provided by the Governments own ITSO back Office Supplier ACT Ltd. The HOPS is the core component in every ITSO scheme, providing the back office gateway through which all data flows both between infield devices and between different schemes. The HOPS enforces the ITSO security framework and manages messages within the On-vehicle POSTS's. Attributes of the West of England HOPS include:

- Proven in complex, multi-supplier ticketing system environments
- Configurable integration with other systems
- Compatible with ITSO ticketing equipment from all major providers
- Backward compatibility with POSTs at any ITSO specification level
- Fully integrated to the ACT CMS for hot-listing, action-listing and transaction Management

3.2. An overview of the West of England ITSO HOPS is outlined below:



3.3. To integrate with the HOPS, the West of England local authority Major Scheme partners are also in the process of procuring an area wide ITSO Customer Management System (CMS), a software package comprised of optional modules to securely manage their ITSO transaction data. Such management for the Major Scheme corridors is likely to include product applications, cards, tickets, web access, stored value on the cards (E-money) and customer correspondence.

3.4. An important function of a CMS, which is at the cornerstone of the Major Scheme Ticketing Strategy is a dedicated web portal for product and transaction management and the ability of the client to interrogate the trips made, add new products and manage their own smart account at their convenience. As the West of England is a major economic sub-region, and the Major Scheme encompasses three core Park & Ride locations, it is important that the Ticketing Strategy embraces the regional e-money platform currently

being trialled in the West of England area, which will enable for example, people from Cornwall or Wales working in Bristol that day being able to use their Cornwall or Welsh e-money card to seamlessly pay for travel on the Major Scheme routes.

3.5. Core Features of the Ticketing CMS Include:

Ticketing Features Required		Description	CMS
			Will be Available by 2015
1.	Smart Card Production / Encoding	Enables production of ITSO cards	Y
2.	Card Creation Messages sent to/from HOPS	Supports production of ITSO cards	Y
3.	Web Portal for Online Applications	Supports online applications and identity checking only	Y
4.	Customers Card & Product Creation Data Reporting	Supports Management Reports on cards issued, products issued, card holders' registration details.	Y
5.	Card Transaction Reporting	Supports Management Reports on ITSO card usage	Y
6.	Product Transaction Reporting	Supports Management Reports on ITSO product usage	Y
7.	Web Portal for Online Customer Transaction Management	Supports the Cardholders ability to review their ITSO products online.	Y
8.	CMS – HOPS Card & Product Hot-list Interface	Enables an individual's card (or product on the card) to be deactivated, with CMS updating when completed.	Y
9.	CMS – HOPS Card & Product Actionlist Interface	Enables a product to be added to a card from the CMS (required for STR).	Y
10.	Stored Value (STR) / E-Purse Balance Management	Allows management of STR balances on cards & allows carnet/season ticket products to be managed via CMS.	Y
11.	Reimbursement Module	Automatically calculates reimbursements to operators for products and pays them (if linked to finance system).	Y

4. Applying the Technology for the Major Scheme

4.1. Roll Out of Technology Across All Operators in The Major Scheme Area

As part of a region wide DfT supported initiative, the West of England local authorities are in the process of rolling out ITSO enabled ticket machines on over 900 buses operating in its area, and will be providing a CMS management service for all small operators to keep costs down. The partners are committed from 2013 onwards of requiring operational ITSO ticket machines on all tendered services in the area as part of their tendered service contract conditions.

With the lead from TfL on a dual ITSO EMV reader, partners are confident that by the start of 2015, the largest operator in the Major Scheme area will already be providing an ITSO EMV platform for its vehicles. They are in discussions with this provider and expect an EMV roll out by the middle of 2013. Early positive discussions have been held with TfL about utilising their EMV reimbursement platform for the Major Scheme area. A dual ITSO EMV reader will become a requirement of any tender for new Raid Transit services utilising the Major Scheme infrastructure.

5. On-Street Location of Retail POSTs

5.1. The Strategy is based on the significant majority of users having access to and utilising the web portal to optimise off bus ticket product choice and payment services. These products and e-money top ups can be booked on line and added to the customers card automatically when they tap their card on one of the Major Scheme Retail POSTs, Bus Stop ITSO / EMV readers, or on bus for non Rapid Transit Route vehicles.

5.2. Alternatively, where using the Rapid Transit Routes or a single operator, a customer will have the ability to utilise an EMV enabled media (card, phone, key fob) to pay for their travel directly on a tap on, and tap off basis at the Bus Stop or Interchange. To accommodate those customers who do not have, or choose not to use an EMV media for payment, or who choose not to have a West of England (or related) smartcard, then a network of 13 Retail POST vending machines will be installed at key locations within the Major Scheme area. These locations are:

- Cribbs Causeway
- Bristol Parkway
- University of the West of England
- Emerson's Green Park & Ride
- Bristol Temple Meads
- Broad Quay
- Arnolfini
- Broadmead
- Hengrove Park
- Long Ashton Park & Ride
- Cabot Circus
- Bradley Stoke
- SPark

5.3. These Retail POSTs will enable standard off bus tickets to be issued; will issue carnet or day based smart tickets; and will enable users to top up their existing smartcard balances and to download products to their smart media. The proposal is to structure ticketing prices with the operators to financially incentivise the move to an off bus smart environment as all partners will benefit from the journey times saved.

6. On-Street Enhancement of Bus Stop ITSO / EMV Readers

6.1. To optimise the journey times and reliability of the Rapid Transit Service routes, a core aim is to reduce the dwell times of these vehicles at bus stops. It is recognised that a primary cause of delay is the time taken for customer/driver interaction when boarding a vehicle. By equipping each bus stop along the Rapid Transit Service route with an ITSO / EMV reader, users of the new service will be able to 'tap on' at the bus stop from which they board, and 'tap off' at the bus stop where they alight – reducing the need for driver interaction.

6.2. As being applied by TfL and others, the Ticketing Product Strategy will reduce the likelihood of abuse of such an off bus system through the use of incentivised charging mechanisms and disincentives for non compliance. This would be reinforced through the use of on-vehicle checking mechanisms by Inspectors/Customer Hosts in partnership with the operators of the Rapid Transit Vehicles. This removal of transaction time off vehicle is a core element of supporting the improvement to journey speed and reliability.

7. Benefits of the Ticketing Strategy

- This dual ITSO / EMV Strategy will support the core aim of improving boarding times and reducing congestion through the migration of ticketing away from on vehicle purchasing from the driver for all Rapid Transit Vehicle routes;

- The Strategy will ensure the customer has the option of multi operator ticketing products, even where routes are commercially provided, in line with the commercial strategy of the Major Scheme, through utilising the ITSO platform and associated revenue apportionment protocols;

- The Strategy will build upon an existing ticketing infrastructure platform already being rolled out in the West of England area, thereby significantly reducing the cost of ticketing infrastructure within the Major Scheme submission;

- The Strategy is supported by the current operators in the West of England area who already operate on the network to be enhanced through the Major Scheme submission.

8. Costs of the Ticketing Strategy

8.1. As detailed, the Strategy is based upon a technological platform already being procured in the West of England area. The additional costs in relation to the Major Scheme would therefore be as follows:

8.2. New Fixed Costs

20	Dual ITSO/EMV On-Vehicle POSTs for Rapid Transit Vehicles where not provided commercially	£70,000
13	On-street Vending Style Retails POSTs	£143,000
80	Bus Stop ITSO/ EMV Readers for Rapid Transit Service routes	£400,000
1	Online Web Retail Site for off bus ticketing	£20,000
1	New Smart Product Addition onto Existing ITSO On-Vehicle POST's	£45,000
1	EMV Back Office Retail Function Set Up Cost	£25,000
	Marketing & Promotion – include with overall scheme budgets	

8.3. Ongoing Support Costs - Annual

Upgraded CMS Platform & Web Portal for Off Bus Ticket Retailing	£90,000 p.a.
ITSO Licencing	£8,000 p.a.
EMV Back Office Retail Function Hosting Cost	£15,000 p.a.
EMV Transaction Charging for Rapid Transit Service products	Cost to operators
Maintenance & Licencing for On-street Vending Style Retails POSTs	£28,000 p.a.
Maintenance, Licencing & Comm's for Bus Stop ITSO / EMV Readers	£46,000 p.a.

Ticketing Strategy As Outlined in DfT Commercial Chapter

1. Introduction

   The Ticketing Strategy is in line with DfT guidance and policy through seeking to build upon existing ITSO ticketing architecture via the sub-regional technological platform (HOPS) and Card Management System (CMS) already supported by all of the commercial and tendered service operators of the West of England. The Strategy is based upon enhancing existing functionality rather than introducing a new ticketing platform. This carries less risk, is more affordable and is more flexible.

2. Outline Based Specification

   For the Ticketing Strategy:

   - A sub-regional ITSO HOPS & CMS Platform;
   - An Online ITSO Ticketing Retail Function – based on ITSO Ticketing & E-Money;
   - An Online Customer Transaction Management Function;
   - A Back Office EMV Data Transaction Management Platform for supported routes;
   - An On-street ITSO Retail POST solution at up to 13 core locations;
   - An On-street ITSO/EMV Reader at up to 80 bus stops;
   - An On-bus ITSO/EMV POST solution on supported routes;
   - An On-bus ITSO POST solution on all vehicles utilising Major Scheme infrastructure;

3. Procurement Strategy

   The Strategy is based around:

   - Enhancing an existing ITSO HOPS and CMS contract, procured via OJEU in 2010 by one of the Major Scheme local authority partners;

     This existing contract, with Applied Card Technologies Ltd, hosted by South Gloucestershire Council allows for the development of the Ticketing Strategy as outlined, including e-purse activities; and Web Portal interface for Rapid Transit Service routes. A copy of the Contract specification is available if required.

   - Utilising an OJEU procured On-Bus POST Framework Contract funded by the Major Scheme partners in 2011 for the additional On-Bus POSTS as required;

     This Framework Contract (Lot 2), jointly resourced by the Major Scheme local authority partners and South West Smart Applications Ltd (SWSAL) - a not for profit company established to support the roll out of Smart Ticketing in SW England; allows for the procurement of any additional ITSO POSTs for the new vehicles where required. A copy of the Framework Contract is available if required.

   - Utilising an OJEU procured Retail POST Framework Contract funded by the Major Scheme partners in 2011 for the 13 On-Street Retail POSTS as required;

This Framework Contract (Lot 5), jointly resourced by the Major Scheme local authority partners and South West Smart Applications Ltd (SWSAL) - a not for profit company established to support the roll out of Smart Ticketing in SW England; allows for the procurement of Retail ITSO POSTs for the Interchange locations required. A copy of the Framework Contract is available if required.

- Procuring through standard LA practices the necessary EMV support platform.

  This has two elements:
  1) the EMV Back Office – to be procured through negotiation either with existing operator in the Major Scheme area; or with Transport for London in line with initial early discussions; or through a competitive tender process (threshold and de-minimus level dependent). The final route is likely to be influenced by the Rapid Transit Vehicle service operator.
  2) The ITSO / EMV Reader at Bus Stops – to be procured through competitive tender.

4. Sourcing Options

The Major Scheme partners already have in place a Smartcard Management Board comprised of the Heads of Transport of all of the Major Scheme partner authorities, and senior staff from the West of England Partnership. This Board was formed in 2009 and meets on a monthly basis. It is complemented by a Smartcard Management Team, comprised of Thematic Officers from each authority which undertakes the delivery activities. This also meets monthly and reports back to the Management Board.

The Smartcard Management Board has already established operational frameworks with the local bus operators for rolling out and managing ITSO interoperable ticketing for the Major Scheme areas. The Board has:

- Established management processes for procurement;
- Established individual contracts with all local bus operators;
- Maintains a Risk Register of HOPS/CMS Provision, Smart Ticketing Roll-out and Operation;
- Maintains a costed and approved Budget Plan for HOPS/CMS provision and Smart Ticketing;
- Maintains a Programme Plan for its Smart system delivery and innovation.

Copies of the above Budget Plan, and Programme Plan are available upon request.

Central to the Ticketing Strategy sourcing options for the Major Scheme, is building upon an existing set of individual contracts between the local authority and the 21 local bus operators, where a set of published rules associated with varying support levels for on bus ITSO POST roll out, and back office software support and operation are defined. A copy of these rules is attached as Annex A.

This process has established and maintains a direct relationship with every local bus operator in relation to ITSO based Ticketing Products, which will be built upon as the Major Scheme roll out progresses. These contracts are further supported by a committed change to the Tendered Bus Service provision rules to be applied by each of the West of England local

authority partners by the summer of 2012. Each local authority has committed itself to requiring a fully operational ITSO POST to be in place for all of its tendered service contracts.

These actions and contracts as outlined provide the core of an area wide ITSO environment with the public and commercial sectors engaged in a mutually beneficial partnership arrangement delivering a stable platform, upon which enhancements can be developed and sourced for the Major Scheme. It is the Smartcard Management Board which will deliver the Ticketing Strategy for the Major Scheme including additional sourcing as outlined.

5. Payment Mechanisms

Standard local authority processes for payment will be utilised in accordance with established contracts.

6. Pricing Framework and Charging Mechanisms

For the Ticketing Strategy = n/a

7. Risk Allocation and Transfer

For the Ticketing Strategy this will largely be a commercial operator led activity. Mechanisms and contracts are already in place through the area wide ITSO HOPS and CMS to be able to host the products on all vehicles; and between the Smartcard Management Board and local operators for day to day ITSO transactions and multi operator products. The Major Scheme partners will amend their tender specification requirements in 2012 to require ITSO POSTs on all tendered services to capture any new market entrant. As such the majority of Risk will be held by the bus operators, with contractual support to ensure compliance.

Where Risk remains with the Major Scheme local authority partners, this will be managed through the Smartcard Management Board. Such risk is likely to relate to revenue apportionment arising from the off bus ticketing and the operation of the new ITSO / EMV Readers at Bus Stop locations along the Rapid Transit Vehicle routes. These risks will be incorporated into the existing Risk Management Strategy in place for the Smartcard Programme Board, as outlined in Annex B.

8. Contract Length

- The current ITSO HOPS & CMS hosting contract runs until 2016 with the ability to extend.
- The current On-Bus POST and Retail POST Framework Contracts are available until 2016.
- Contract Agreements with local operators will be in place from 2011 until late 2016/early 2017.
- With the change to the local authority tendered service contract conditions from 2012 the use of ITSO as the core interoperable platform will become steady state from late 2012 onwards.

9. Human Resource Issues

In relation to the Ticketing Strategy there are no TUPE or Trade Union issues. The Smartcard Board already has in place support contracts to oversee the introduction of new ITSO ticketing products for West of England partners. These will be built upon for the roll out of the Major Scheme requirements.

10. Contract Management

The Smartcard Management Board will coordinate the delivery of the Ticketing Strategy on behalf of the Major Scheme partners in accordance with the Major Scheme delivery timetable.

Annex A

West of England Authorities ETM Support Provision Rules & Costs

The West of England authorities wish to support the area wide introduction of ITSO ETMs to operators of registered local bus services (services). As part of this process, the authorities have agreed a programme of support for operators who operate within the West of England area.

A. In Relation To Tendered Service Vehicles And Their Spares

- An ITSO ETM will be offered to operators where they operate daytime services that are wholly contracted (on a gross or net cost basis) by local authorities in the West of England area. The operation of wholly contracted services in general should be for at least five days in any standard week. If the daytime operation is provided commercially, and only the evening service is contracted, the service is not considered to be wholly contracted. The number of ETMs allocated will match the operators qualifying contracted peak vehicle requirement (PVR), although an allowance for spares may be made.

- The ITSO ETMs for these vehicles and an appropriate number of spare vehicles will be provided on a low cost rental basis. The cost of the ITSO ETM rental will not exceed £50 per ITSO ETM per year. After 5 years, ownership of the ITSO ETMs will transfer to the operator.

- The cost of the ITSO ETM sim card (3G data cost approx £66 per machine p.a.), and the ETM Depot Software (£250 per machine p.a.) for the main vehicles will be fully funded for the first year, or until the start of the operator's next BSOG year, whichever is the sooner. For the spare vehicles, these costs will be the responsibility of the operator.

- The initial ITSO ETM set up and configuration costs, training, installation and testing will be fully funded. The ITSO ISAMs will remain in local authority ownership, but will be installed and configured for the ITSO ETMs at no cost to the operator.

- The ITSO smartcard data transaction management for West of England products will be provided by the local authority as a managed service at no cost to the operator where the operator does not have its own CMS package.

- Maintenance of the ITSO ETM will be fully funded for the 1st year. Thereafter, the operator will be responsible for ongoing maintenance. Options for this will be made available to the operator in advance.

- Where an operator does not wish to use the ITSO ETM available from the local authority, a financial contribution of up to £1500 per vehicle will be made available to the operator to procure an alternative ITSO ETM machine. Any alternative chosen by an operator must be compliant with the West of England ITSO ETM Technical Specification with confirmation of operation required for a 5 year period.

- Where an operator is supported by the West of England as outlined above, it will be a requirement of support that all vehicles operated on services in the West of England area are also upgraded to an ITSO ETM. The West of England partners are willing to support this process as outlined below in line with the following table. The number of vehicles relate solely to those used on local bus services predominantly within the West of England, and not to total fleet size. Evidence in the form of Registration Documents may be sort in the case of disputes.

	1 – 14 vehicles	15 – 29 vehicles	30 – 100 vehicles	> 100 vehicles
Percentage of fleet that is operated commercially or with third party support.	Up to 100%	No more than 80%	No more than 60%	No more than 40%

B. In Relation To Other Service Vehicles And Their Spares

- An ITSO ETM will be offered to operators where they operate commercial services in the West of England area at a significantly reduced cost of £500 per machine and £50 rental for 5 years, or for £200 rental per machine per year. After 5 years, ownership of the ITSO ETMs will transfer to the Operator. However, where the total no of vehicles operated on bus services (tendered and commercial) is less than 15, they will be treated in the same way as tendered vehicles.

- The cost of the ITSO ETM sim card (3G data cost approx £66 per machine p.a.), and the ETM Depot Software (£250 per machine p.a.) for the commercial vehicles and their spares will be the responsibility of the operator.

- The initial ITSO ETM set up and configuration costs, training, installation and testing will be fully funded. The ITSO ISAMs will remain in local authority ownership, but will be provided to, installed and configured for the ITSO ETMs at no cost to the operator.

- The ITSO smartcard data transaction management for West of England products will be provided by the local authority as a managed service at no cost to the operator only where the operator does not have its own CMS.

- Maintenance of the ITSO ETM will be fully funded for the 1st year. Thereafter, the operator will be responsible for ongoing maintenance. Options for this will be made available to the operator in advance.

- Where an operator does not wish to use the ITSO ETM available from the local authority, a financial contribution of up to £1500 per vehicle will be made available to the operator to procure an alternative ITSO ETM machine. Any alternative chosen by an operator must be compliant with the West of England ITSO ETM Technical Specification with confirmation of operation required for a 5 year period.

Rules Applicable to All

- Operators of services contracted by neighbouring English local authorities but which operate in the West of England area will be dealt with in accordance with the policy of the contracting authority.

- Where the number of ITSO ETMs supported by the West of England authorities is more than 10% over the required PVR inc spares (potentially through the loss of tenders), then the West of England Authorities reserve the right to have the equipment returned to them.

- From April 2012 onwards the West of England authorities will have amended their contract conditions so that it will become a requirement to have fully functioning ITSO ETMs on any new contracts awarded.

- Where ISAMs are provided by a West of England Local Authority, the annual ITSO connection fee (around £12.31 per ISAM) will be paid by the Local Authority during the rental period. Where an ISAM is provided for a non rental ITSO ETM then the annual connection fee becomes the responsibility of the ITSO ETM owner.

Operators Expected to be Covered by these Rules

- Category A operators, whole fleet:
  B&NES ES, Blue Iris, Coombs Travel, CT Plus

- Category A operators, part fleet:
  Abus, Buglers, CT Coaches, Eagle Coaches, Eurotaxis, Faresaver, First, Severnside, Somerbus, South Gloucestershire Bus & Coach, Wessex

- Category B operators:
  Fleet size 1 – 14 vehicles: Beaufort, Buglers, CT Coaches, Eagle, London Bus, North Somerset Coaches, Severnside, Somerbus, Westward Travel
  Fleet size 15 – 29 vehicles: Abus, Eurotaxis
  Fleet size 30 – 100 vehicles: Faresaver, South Gloucestershire Bus & Coach
  Fleet size more than 100 vehicles: Wessex

- All other operators are deemed not to meet these rules.