

Midland Metro - City Centre Extension & Fleet Replacement

Delivery, Commercial & Financial Case

October 2009

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1 Introduction

Background

- 1.1 This Delivery, Commercial and Financial Case document has been developed in accordance with the Department for Transport's guidance for Local Authorities seeking Government funding for major transport schemes. It presents the robust arrangements that are in place to deliver the scheme to time, cost and quality and demonstrates a sound procurement strategy.

Outline of the Draft Delivery & Commercial Case

- 1.2 The elements that describe the case are set out in eight chapters. The chapters cover the following areas:
- | Chapter 2 - Procurement Strategy describes the assessment of procurement options and the work undertaken to determine the most appropriate approach for the scheme.
 - | Chapter 3 - Cost Estimation and QRA sets out the capital costs of the projects comprising this business case.
 - | Chapter 4 - Funding describes the local funding arrangements Centro has put in place to deliver the projects comprising this business case.
 - | Chapter 5 - Governance identifies the roles and responsibilities for the delivery of the scheme.
 - | Chapter 6 - Project Planning describes the processes and plans that have been developed for the scheme and identify their timescales and key dependencies.
 - | Chapter 7 - Risk Management sets out the strategy that has been developed and that is being followed in order to identify and manage risks to the scheme.
 - | Chapter 8 - Stakeholder Management Plan presents the stakeholders and interests that have been identified and presents the approach that has been developed to engage with them.
 - | Chapter 9 - Monitoring and Evaluation sets out the measures and proposed evaluation method for monitoring the performance of the scheme against its objectives post implementation.

2 Procurement Strategy

Introduction

2.1 It is Centro's intention to procure the various contracts to deliver the Birmingham City Centre Extension and Fleet Replacement in a manner that attracts maximum private sector interest and that provides best value for money. Centro's proposal for the procurement of the projects comprising this Business Case has therefore been developed to deliver robust, affordable projects that can be completed both to time and within budget and which will be attractive to the private sector construction, tram supply and operating markets. This will be achieved through:

- | The most appropriate procurement and contract strategy;
- | Robust risk and cost management;
- | Operator involvement in design and construction; and
- | Adoption of a strong partnering ethos in delivery and operation.

2.2 Each of these issues is addressed below, along with the approach proposed to successfully deliver the above objectives.

Evaluation of Procurement Route

2.3 Procurement of Metro Line 1 was undertaken at a time when risk transfer (construction, operations and revenue) to the private sector was a key objective in PFI projects. As a consequence the concession agreement and banking documents placed most risks onto the private sector through the Concessionaire. There was little detailed analysis as to whether transferring a specific risk was value for money since the policy climate at that time did not encourage a more flexible approach to risk sharing.

2.4 The climate is now very different and it is widely acknowledged that if risks/contract structures are ordered differently they would provide better value for money. Centro have reviewed three areas all of which point towards a more partnering approach needing a structural change in contract delivery (i.e. a PPP approach).

- | The area where greatest benefit could be obtained is by the public sector sharing revenue risk. This view is reinforced by the DfT's standard approach to revenue risk with regard to rail franchises. This led to the conclusion that a structure was needed to support a more appropriate risk allocation arrangement.
- | It was also evident from the discussion with potential bidders that there is a great deal of uncertainty in looking at operating cost forecasts with regard to long term repair and renewals. It is considered that improved value for money may be obtained through a medium-term operating period. This would be inconsistent with a Design Build Finance and Operate structure which requires financing over a longer period.
- | A further reason for considering a change to the usual DBFO structure is the concern by the private sector that the Metro Concession may at some uncertain

future date be terminated early due to future network expansion. It is increasingly unsustainable in market terms to award a long term contract and still expect the operator to make long term investment decisions which become unfinanceable, if termination because of network expansion is likely.

- 2.5 These conclusions led to the view that a revised contract structure is needed to:
- | Reflect a better risk profile for the public and private sectors;
 - | Give greater confidence to the private sector constructors and operators in order they may participate in major public transport improvements;
 - | Allow for network expansion to take place without disrupting any financing arrangements;
 - | Fit with funding and type of financing likely to be available over the next few years; and
 - | Implement projects expeditiously.

2.6 It is therefore considered that a revised procurement strategy for the delivery of Metro is required; one which will be attractive to the private sector and which will transfer the risks to the party best placed to manage that specific risk such that Centro will receive the best value for money in transferring risk.

2.7 In particular Centro's procurement strategy aims to deliver the much needed infrastructure enhancements as soon as practicable. Whilst other forms of concession, such as Design, Build, Maintain via a consortium approach, or combining operator and tram procurement may be considered, they would lead to higher transaction costs, and would significantly delay procurement.

2.8 In order therefore that Metro can be delivered in a cost effective manner an alternative structure has been developed which reflects an appropriate risk profile for the public and private sectors. It consists of a number of elements, as shown below:-

- | | |
|------------|---|
| Funding - | Centro will potentially prudentially borrow on the strength of the net project cash flows and other annual resources e.g. top slice Local Transport Plan (LTP) funding. |
| Revenues - | The market would seem to support revenues being more a public sector risk, setting fares and encouraging more through ticketing, albeit there needs to be an incentive for the operator to maintain high performance levels linked to customer satisfaction |

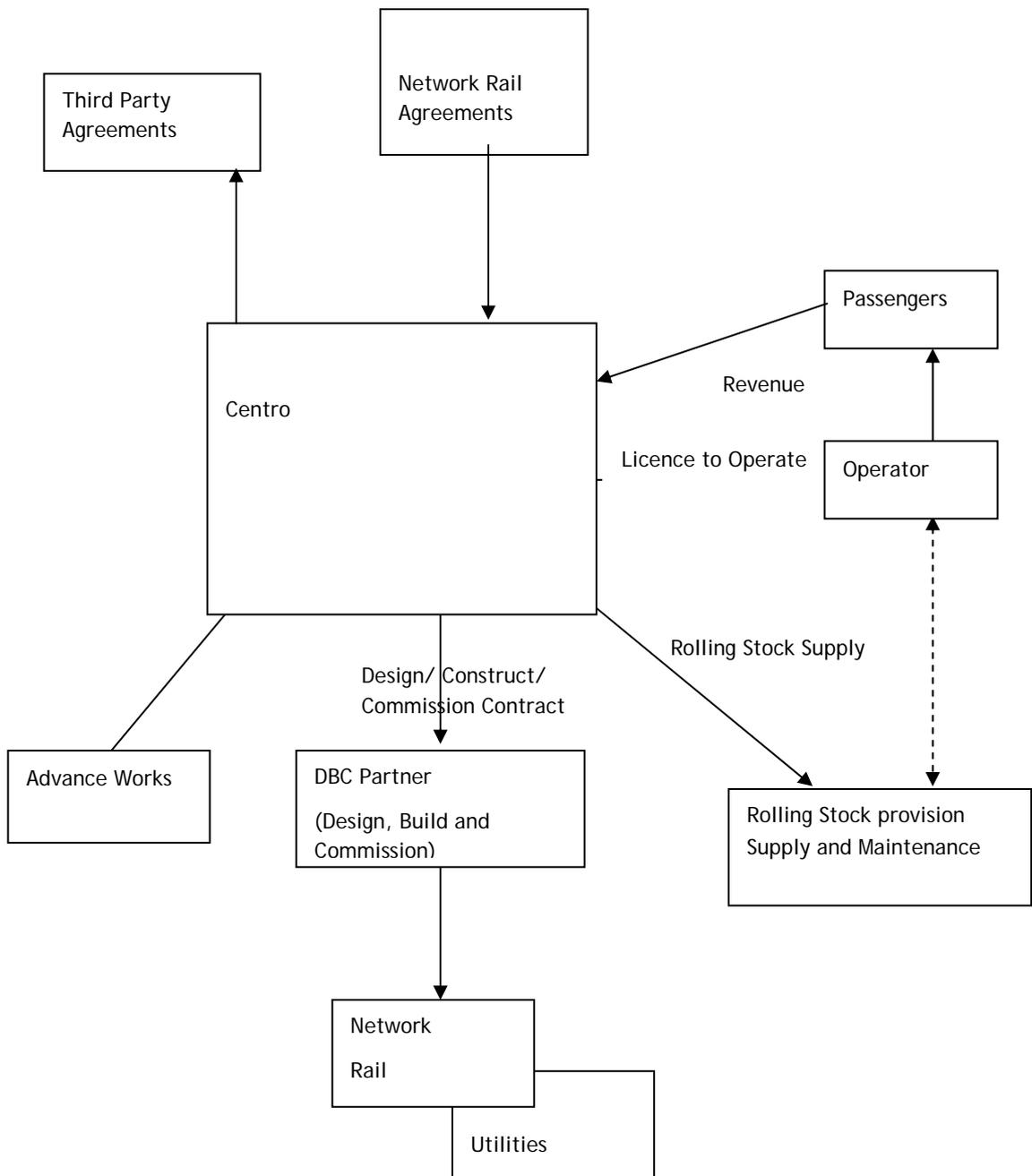
Operations -	Centro would award an operations contract through competition. Most systems continue to be delivered by the private sector for greater efficiency and flexibility; in this case an operating contract term of an initial 10 years would be envisaged. Incentives with regard to performance and patronage levels would also be incorporated into any contract. Most operational staff will transfer to a new operator through the TUPE transfer process
Infrastructure provision -	Separate infrastructure contracts will be entered into for the BCCE and Depot/Line 1 modifications, allowing whole life costings to be properly taken into account. These contracts can be structured on a mix of grant and some performance payment basis or structured longer retention/defects liability period to ensure suppliers deliver high quality performance.
Rolling Stock provision and Depot/Line 1 Modifications -	Rolling stock supply and maintenance options, and depot/Line 1 modifications will be procured by Centro with extensive input into their specifications by the Operator. This way the risk of integrating with existing systems and operating procedures etc will benefit from consistent operator input. The operator will also be expected to advise on/ specify the most appropriate maintenance and depot arrangements.

2.9 The current operator, Travel Midland Metro (TMM), is running Line 1 at good levels of reliability, measured on a kilometres run basis, and has an intimate knowledge of the infrastructure, the existing trams and the travel characteristics of the public in the Metro corridor. TMM's expertise has been utilised in the development of the project, in particular in the depot design and construction strategy and in determining the appropriate track layout in the city centre to provide robust operational capability in the event of incidents on the highway and the efficient operation of the New Street Station terminus.

2.10 Nevertheless due to the significant changes required to the operating contract following construction of the extension and the introduction of new trams with the potential for a revenue sharing agreement, Centro proposes to let a new Operations contract at the latest once BCCE has been constructed and if contractually possible prior to new trams being brought into service. The new contract will cover operation and maintenance of Line 1 and BCCE. It is anticipated that a wide range of significant market players will bid for the new Operations contract, affording the ability to obtain value for money in the letting of the contract, whilst ensuring that an operator with a longer term stake in the operation is in place as soon as contractually possible.

- 2.11 The advantages of the separation of the operations, revenue risk and Infrastructure provision are considered to be:
- | Separating revenue risk will allow public sector to raise capital resources through prudential borrowing and make the operations contract more attractive to the market;
 - | Decoupling Infrastructure provision from revenue risk will create a contract attractive to the market;
 - | Allows both public and private sectors to take responsibility for and manage their own risks;
 - | Enables network expansion to be more easily achieved; and
 - | Operators will be more willing to accept operating cost (particularly maintenance and renewal cost) risk over shorter time period (10 years).
- 2.12 It is therefore considered that this structure will secure best value for money:
- | Allowing the optimum pricing of the Design, Build, and Commission (DBC) elements;
 - | Securing a separate operate/maintain contract;
 - | Reducing cost of finance by allowing funding to be raised by Centro for maturities beyond the life of the operating contract and in line with market expectations; and
 - | Allowing operator input into the specifications of trams and depot modifications.
- 2.13 This structure will make future expansion of the network easier because it:
- | Eliminates the need to prepay debt raised to finance the assets, thereby reducing the cost of compensating the incumbent operator (prepayment fees can be a significant cost with regard to financing packages from lenders);
 - | Reduces the financing requirement of bidders for the operating concession and, critically, their equity commitment (particularly likely to be a problem with operators); and
 - | Reduces the need for bidders due diligence on the existing system, making tendering easier and cheaper.
- 2.14 Diagrammatically the procurement strategy is shown in figure 2.1 overleaf.

FIGURE 2.1 PROCUREMENT STRUCTURE



Assessment of Supplier Market

- 2.15 Centro has had extensive discussion with construction companies, tram manufacturers and operators and has designed the proposed contracting strategy around the outcome of these discussions. Centro is confident that the projects comprising this Business Case will thereby attract significant interest from the relevant markets.

The Procurement Strategy

- 2.16 Centro's approach to procuring the projects comprising this Business Case is described fully in Appendix C1.

Competition Issues

- 2.17 The proposed procurement route will clearly deliver an appropriate level of competition for the tram, operator and infrastructure procurement through the competitive tender processes.

Specification

- 2.18 Centro has used and will use very experienced consultants, who have been involved in other recent tram projects, to develop the specifications for the extension project, trams and depot modification. Liaison with the supplier market has informed this process and has helped to identify the best format and content which will facilitate the tendering process.
- 2.19 Research undertaken by the EU sponsored LibeRTin project and more recently feedback from UKTram activity groups and the ORR's Enhanced Guidance working group has similarly been reviewed and incorporated.
- 2.20 The approach taken with drafting the specification has been closely linked with the aspirations of the stakeholder local authority. It has been particularly noteworthy, that the lack of definition on other projects has created a high risk premium tendering attitude by infrastructure companies, or they have declined to bid at all. They believe that they have been exposed to scope creep and qualitative enhancement, primarily through the detailed planning process where efficient design has been sacrificed to environmental betterment.
- 2.21 As a result of the above, Centro will prepare specifications for the BCCE infrastructure works that clearly set out the desired outputs and enables engineering and architectural innovation within the confines of a clear 'Street Design Guide' agreed by the local authority. In addition, Centro will secure planning permissions for key items, including the depot amendments, to minimise risk of 'scope creep' and provide certainty to the Infraco tenderers.
- 2.22 It is Centro's intention to procure a standard tram so that costs are kept to a minimum, and a suitable outline tram specification has been prepared to align with this aim.

Contract Management

General

- 2.23 Arrangements for managing the four Metro implementation contracts as detailed above have been developed in outline and are reflected within the draft contract documentation. The arrangements will:
- | Build on the experience gained during the management of the existing Line 1 contract;
 - | Ensure continuity of resources with the experience gained during the current stage of design and contract development; and
 - | Integrate the contractors to the extent that they have mutual targets and dependencies focussed on project delivery and network availability.

Risk Allocation and Transfer

- 2.24 The Risk Management Strategy sets out the process for the detailed risk analysis that Centro has undertaken to generate and value the risks. Centro's aim is to transfer the risks to the party best placed to manage that specific risk and in turn receive the best value for money in transferring risk.
- 2.25 An allocation of risks across each contract has been assumed for costing purposes, but will ultimately be agreed with the preferred bidders.

Implementation Timescales

- 2.26 A detailed bottom up approach to programming has been adopted in order to avoid over optimistic programming.
- 2.27 Actual delivery durations for the several light rail projects that have been procured in the UK were reviewed to provide a benchmark for the programme. The high level milestones as detailed in Chapter 6 and these are consistent with the benchmarking exercise. Programme issues involving outside parties are being resolved by entering into contractual arrangements with these parties, for example Birmingham City Council, Network Rail, developers and building owners. A number of DfT decision points are included in the programme and will be critical to the delivery of the project and some latitude has been used against guidance timeframes; this together with a policy of close interaction on all issues as between Centro and the DfT is intended to enable the key dates to be met.
- 2.28 It is vital that tenderers are given adequate time to prepare properly considered offers within a clear process that they can have confidence in. It is important that neither tenderers nor Centro are exposed to unnecessary delay, cost or uncertainty. With this in mind, the procurement process has been designed to ensure that it provides the appropriate level of competition within a timeframe that Centro resources can deliver to.

Project Programme

- 2.29 This project extends the Metro into city centre areas that require special consideration. In recognition of this Centro has worked together with the local authority to develop construction strategies that minimise the construction impact and facilitate an efficient workflow. These have been and will be incorporated into

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agreements with obligations placed on both the authority and the contractor to work together to deliver the works.

- 2.30 The works programme has been rigorously tested against the various work categories output norms and aligned with the cost plan to ensure deliverability to time and budget.
- 2.31 In order that tenderers and reviewers alike might quickly assimilate the intricacies of the various documents that inform and impact upon the works programme, Programme Rationale papers have been prepared. These are included in Appendices C2 (BCCE) and C3 (depot).

3 Cost Estimation & QRA

Introduction

- 3.1 Centro has carried out a thorough estimate of the costs for implementing the scheme in order to ensure they provide a comprehensive, robust and reliable basis for the consideration of the financial and Value for Money cases. The current estimate reflects the latest scheme proposals and includes levels of risk determined by a full Quantified Risk Assessment (QRA) process.
- 3.2 The development of the cost estimates has been an iterative process mirroring the key design development stages. A benchmarking exercise for the scheme, comparing it against other light rail schemes, has indicated that the cost estimate is towards the higher cost range. This is as anticipated given the city centre nature of the extension and its relatively short length.
- 3.3 Associated with the development of the scheme cost estimate, a consistent approach has been used to prepare a programme of enabling and construction works. This has enabled the application of realistic cost inflation factors in order to produce scheme outturn costs.

Development of Scheme Cost Estimate

- 3.4 In January 2008 Centro appointed Franklin + Andrews (F+A) to carry out a review of the previous scheme estimates for the city centre extension. In order to accurately reflect the scheme design during this independent review process, the original Faithful & Gould (F&G) estimates were compared to the latest design available. F+A reported that the cost estimates previously produced by F&G reflected the likely outturn costs that could be expected. However, due to the extensive amount of design development that had taken place subsequently to the previous estimate, a number of areas were identified that had previously been unknown and needed inclusion or areas requiring updating.
- 3.5 In order to amend the cost estimate, the latest design was analysed and all key quantities abstracted. This exercise was carried out by F+A estimators in conjunction with the Design Team and Centro's Project Management Team. Where assumptions had to be made, these assumptions were made with the full agreement of all parties to ensure full consistency and clarity within the estimate.
- 3.6 Any existing quantities carried over from previous cost estimates were subjected to a quantities check, mathematical check and peer review by the Project Team. All established quantities were collated on the estimate summary sheet, and market rates applied to produce a base cost.
- 3.7 The market rates utilised within the estimate have been collated from key sources, these being:
- | Centro Project Management Team experience and historic projects;
 - | F+A Estimators' experience and past projects of a similar nature;
 - | Quotations direct from the market place; and
 - | F+A Economic Research Unit.

- 3.8 All rates were 'normalised' and benchmarked to ensure that they are completely applicable to the scheme.
- 3.9 The majority of the design development has resulted in the production of new estimates for all structural elements of the estimate. These elements represent a significant proportion of the base cost and this development of the estimate is key to the management of the risks associated with the project. Reflecting this, a QRA process of identifying and mitigating key project risks has been carried out and this process was reflected within the development of the base cost estimate.
- 3.10 Several risks and uncertainties have been included within the cost estimate, an allowance for a proportion of the excavated waste being hazardous and requiring specialist treatment for example. This inclusion allows for a more accurate representation of the likely outturn costs and facilitates the use of opportunities within the risk register, i.e. using the above example, that the quantities costed may not occur.
- 3.11 The recent volatility in international currency markets has led to significant change in the £/Euro exchange rate. This will impact particularly on the tram purchase costs. Centro's proposal is that the unit cost in Euro from recent procurements in the UK is factored by the current exchange rate (£1=1.088 Euro) to give a Conditional Approval figure for inclusion in the business case. This particular cost item will be revisited at Final Approval stage based on the then tram tender prices and then current exchange rate. Should the £/Euro exchange rate have worsened DfT will fund the difference. DfT will take the benefit of any improvement in the exchange rate.

Scheme Cost Estimate

Preparatory Costs/Advance Works

- 3.12 Costs expended by Centro in preparing the designs and all other costs expended from June 2008 are shown in the table below. Also included are preparatory costs which are deemed to be eligible in accordance with the DfT Guidance. The construction of the viaduct at Snow Hill, valued at £9.8m, has been deemed as "sunk costs" as the work has been undertaken as part of the Ballymore development of the site and is not included in these costs.
- 3.13 As Centro is securing the TWA planning consents for the Birmingham City Centre extension by means of construction in advance of the Metro bridge over Great Charles Street Queensway this cost has been included within the costs shown in Table 3.1 overleaf. It has been assumed that DfT will repay its share of these Advanced Works costs once the scheme Final Approval has been received.

TABLE 3-1 PREPARATORY/ADVANCED WORKS COSTS (£M 1Q2009)

Scheme element	Eligible Preparatory Costs
City Centre Extension/Trams	1.7
Replacement Tram Fleet	3.4
Depot & other works	4.1
Total Preparatory Costs	9.2
Great Charles Street Bridge Advanced Works	3.1
Total	12.3

Totals may not sum due to rounding

Scheme Costs

- 3.14 The scheme cost estimate is presented in Table 3.2. A more detailed cost summary is provided in Appendix C16. At this current stage of design, the construction programme does not lend itself to the detailed pricing of contractor preliminaries. Wherever possible, items that could be considered as a project preliminary cost have been separated from the preliminaries umbrella and priced as a line item within the estimate. In addition to such items, a percentage addition has been applied to the base estimate to reflect the likely costs of contractor preliminaries, overheads and profit. These percentage uplifts are derived from the Project Management Team's experience with constructing schemes of a similar size and nature.
- 3.15 In addition to preliminaries, estimates have been produced for the following elements of the scheme cost:
- | Land Purchase Costs;
 - | Regulatory Consents and Commissioning;
 - | Utility Diversion Costs;
 - | Local Authority Design Approval Costs;
 - | Traffic Regulation Orders;
 - | Network Rail Interface Costs;
 - | Infrastructure Spares Costs;
 - | Centro Management Team Costs, including Site Supervision;
 - | Costs associated with interface with new Concessionaire; and
 - | Pre-operating Commissioning Costs.
- 3.16 Each elemental estimate listed above has a fully interrogated cost estimate compiled by and reviewed by the Project Team. Wherever possible, specialist advice has been sought to ensure that the correct party compiles that particular aspect of the estimate. Utility costs have been prepared by David Rumney, a

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specialist appointed to work on this element by Centro. Tram acquisition costs have been prepared by Mott MacDonald.

TABLE 3-2 SCHEME COST ESTIMATE (£M 1Q2009 PRICES)

Scheme element	Base Scheme Costs	QRA Pmean	Total
City Centre Extension/Trams	38.1	4.5	42.6
Replacement Tram Fleet	42.8	1.4	44.2
Depot & other works	17.2	1.3	18.4
Total	98.1	7.1	105.2

Totals may not sum due to rounding

Outturn Costs

- 3.17 The above costs represent the Cost Estimate at Q4 2009. These costs have been subjected to an inflationary uplift of 2.7% per annum for construction inflation, as advised by DfT, given the current economic climate.
- 3.18 However, the risk of there being real inflation on capital costs has been included under the QRA process. This has been achieved by distributing the costs over the construction period to reflect when the work is planned to be carried out, as illustrated in the construction programme.
- 3.19 F+A has developed a unique set of indices to reflect both cost and tender price movement of railway construction. Analysis and discussion with leading specialists within the sector established a need for the indices. The indices are offered as an alternative to the use of the Retail Price Index (RPI) to inflate and deflate project budgets. A regular review and updating of the indices with forecasts for future cost and tender movements is published on a regular basis.
- 3.20 The following were established as being typical of cost significant components of railway projects:
- | Management and Design;
 - | Land Value;
 - | Signalling;
 - | Telecommunications;
 - | Electrification;
 - | Permanent way; and
 - | Stops and Civil Engineering.

- 3.21 Through the use of weighting existing public domain indices for historical movements and trending and surveys for predictions, cost indices have been created for each of the cost components from a base year of 1995. These indices have been weighted to replicate a typical major infrastructure project in order to generate a Railway Project Cost Index. Railway project costs are generically more expensive than traditional civil engineering projects, and the weightings applied reflect this additional cost.
- 3.22 F+A has utilised the F+A Railways Cost Index to inform the treatment of the risk of real cost inflation for the scheme.
- 3.23 Table 3.3 below sets out the outturn costs for the scheme.

TABLE 3-3 OUTTURN SCHEME COST ESTIMATE (£M)

Scheme element	Eligible Preparatory/ Advanced Works Costs	Base Scheme Costs	QRA Pmean	Total
City Centre Extension/Trams	4.9	42.3	5.3	52.4
Replacement Tram Fleet	3.5	47.1	1.5	52.1
Depot & other works	4.2	17.2	1.4	22.8
Total	12.6	106.6	8.2	127.3

Totals may not sum due to rounding

Optimism Bias

- 3.24 The total outturn cost estimate presented above provides the Quantified Cost Estimate (QCE) for the scheme. For the purposes of the Value for Money appraisal and the estimation of the Additional Risk Layer (ARL) for funding determination, optimism bias uplifts have been identified. These are presented in Table 3.4.
- 3.25 Transport projects are inherently risky and subject to uncertainties due to the long planning horizon and complex interfaces. Often the project scope or ambition level will change during project development and implementation due to uncertainty at the earlier project stages. Hence, a certain degree of budget uncertainty exists which will typically be reduced through the project cycle.
- 3.26 To address the tendency for appraisers to be overly optimistic about key parameters **The Green Book** (HM Treasury, 2003) suggests that appraisers should make explicit, empirically based adjustments to the estimates of a project's costs, benefits, and duration. These adjustments are based upon the appraisal of a number of contributory factors in the following categories:-
- I Procurement - complexity of contract structure, Involvement of contractor in design, contractor capabilities, government guidance, disputes and claims and information management;
 - I Project Specific - design complexity, degree of innovation and environmental impact;

- | Client specific - adequacy of business case, number of stakeholders, funding availability, project management team and project intelligence;
- | Environment - public relations, site characteristics and permits/consents/ approvals; and
- | External Influences - political, economic, legislation/regulations and technology.

3.27 In accordance with DfT guidance the adjustments for optimism bias have been based upon the empirical data available and reflect the characteristics of the costs under consideration. Given that TWA powers have been granted for the city centre extension (and some works, such as the Snow Hill viaduct have been constructed) and being an extension to the existing system, the scheme is at an advanced stage of development and there is a strong body of understanding and knowledge in relation to the cost estimates.

3.28 The identified uplift for the tram cost is lower than for the construction costs due to the vehicles being a known product for which a well-developed market exists.

TABLE 3-4 OPTIMISM BIAS UPLIFTS

Scheme element	OB Uplift	OB Value (1Q 2009 £m)	OB Value (Outturn £m)
City Centre Extension/Trams	18%/6%	6.7	7.5
Replacement Tram Fleet	6%	2.7	2.9
Depot & other works	18%	3.3	3.4
Total	-	12.6	13.7

Totals may not sum due to rounding

Approved Scheme Cost

3.29 The estimated Approved Scheme Cost (ASC) includes both the QCE and the ARL (50% of the optimism bias uplift). It is on the basis of this value that the contribution sought from the DfT has been calculated. The ASC is presented in Table 3.5.

TABLE 3-5 APPROVED SCHEME COST (£M OUTTURN)

Scheme element	Quantified Cost Estimate	Additional Risk Layer (50% of OB Uplift)	Total (ASC)
City Centre Extension/Trams	52.4	3.7	56.1
Replacement Tram Fleet	52.1	1.5	53.6
Depot & other works	22.8	1.7	24.5
Total	127.3	6.9	134.2

Totals may not sum due to rounding

4 Funding

Introduction

- 4.1 This chapter presents the proposed approach for funding the City Centre Extension and Tram Fleet Replacement scheme. It is based upon the scheme costs described in Chapter 3 and set out below. In addition to the funding for the scheme being sought from central government, significant local funding contributions are being made.

TABLE 4-1 OUTTURN SCHEME COST ESTIMATE (£M)

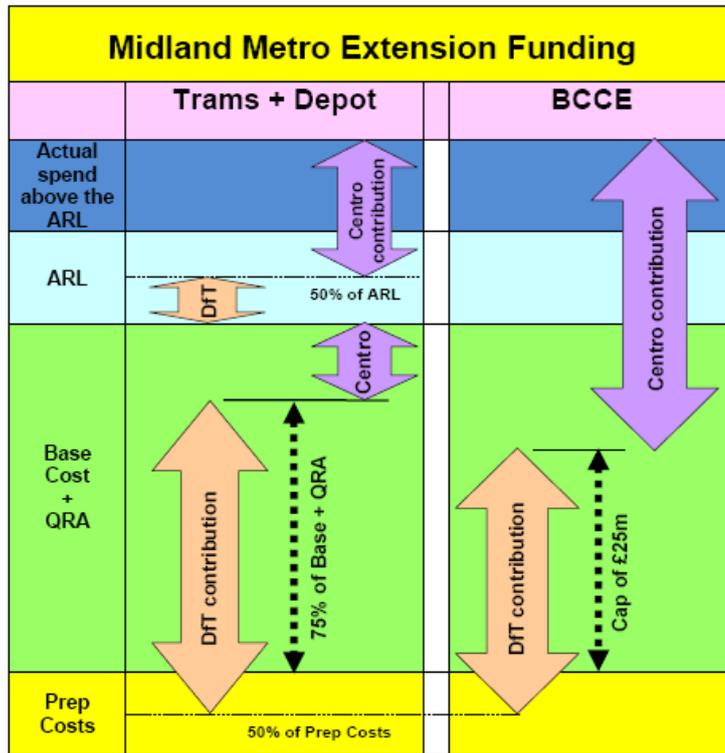
Scheme element	Prep/ Advanced Costs	Base Scheme Costs	QRA Pmean	Total	ARL	Total
City Centre Extension/Trams	4.9	42.3	5.3	52.4	3.7	56.1
Replacement Tram Fleet	3.5	47.1	1.5	52.1	1.5	53.6
Depot & other works	4.2	17.2	1.4	22.8	1.7	24.5
Total	12.6	106.6	8.2	127.3	6.9	134.2

Totals may not sum due to rounding

Proposed Funding

- 4.2 The funding package proposed is for Government to provide:
- | A capped £25 million contribution to the City Centre Extension project, with the remaining project costs and any cost overrun being locally funded by Centro;
 - | 75% of the Quantified Cost Estimate for the acquisition of the replacement tram fleet and associated works to the depot and stops, up to a figure in accordance with Guidance including 50% of the Additional Risk Layer associated with these elements of the project; and
 - | 50% of the preparatory costs/advanced works costs for the complete scheme.
- 4.3 Based on the proposed arrangement the total contribution requested from Government is £81.7, up to a maximum of £83.3m with the remaining almost 40% of the project costs being locally funded.
- 4.4 This arrangement is illustrated in Figure 4.1.

FIGURE 4.1 PROPOSED FUNDING ELEMENTS



4.5 Based on the principles summarised above, the funding contribution from DfT can be set out as follows in Table 4.2 below.

TABLE 4-2 SUMMARY OF DFT FUNDING REQUIREMENTS

Scheme element	Prep/ Advanced Costs	Base Costs	Base DfT Contribution	ARL	Maximum DfT Contribution
City Centre Extension/Trams	2.4	25.0	27.4	0.0	27.4
Replacement Tram Fleet	1.8	36.4	38.2	0.7	38.9
Depot & other works	2.1	14.0	16.1	0.8	16.9
Total	6.3	75.4	81.7	1.6	83.3

Totals may not sum due to rounding

4.6 The contributions from each party can be set out as follows in Table 4.3.

TABLE 4-3 ELEMENTS OF FUNDING REQUIREMENTS

Scheme element	Funding QCE			Funding QCE + ARL		
	QCE	DfT	Local	QCE + ARL	DfT	Local
City Centre Extension/Trams	52.3	27.4	25.0	56.1	27.4	28.7
Replacement Tram Fleet	52.1	38.2	13.9	53.6	38.9	14.7
Depot & other works	22.8	16.1	6.8	24.5	16.9	7.6
Total	127.3	81.7	45.6	134.2	83.3	50.9

Totals may not sum due to rounding

4.7 While some allowance for funding requirements needs to be made through the tendering period, in the main, funding will be raised during the construction period. The table below assumes any RFA grant will be drawn down in accordance with the current RFA profile. The project construction milestones payments will also need to reflect tenders and therefore may need to be adjusted.

4.8 It is proposed that the Government contribution is profiled in proportion to overall project expenditure, including the reimbursement in arrears at the appropriate Approval Stages of project development costs and advance works costs. Table 4.4 below sets out the proposed annual funding requirements, arranged as specified in the Major Schemes Guidance. These funding requirements exclude funding for the Additional Risk Layer.

TABLE 4-4 ANNUAL FUNDING REQUIREMENTS (£M)

	Prep/ Adv	2010/11	2011/12	2012/13	2013/14	2014/15	Total
Estimated Capital Cost (QCE)	12.6	9.0	26.7	32.2	36.2	10.6	127.3
RFA Funding	6.3	5.9	17.6	21.1	23.8	6.9	81.7
Local Contribution	6.3	3.1	9.2	11.0	12.4	3.6	45.6

Totals may not sum due to rounding

4.9 By adopting Centro's proposed procurement strategy it is felt that the balance of risk and price will be optimised, giving the opportunity of cost reduction in out-turn prices following competition.

- 4.10 The above funding excludes the contributions from Birmingham City Council in respect of works already undertaken to secure the Metro alignment. The viaduct at Snow Hill carried out under an s106 agreement with Ballymore is valued at £9.8m. In addition the value of land transfers and the works undertaken at Bull St add a further £3.2m in value.

Local Funding

- 4.11 The available funding for BCCE and New Trams from RFA and therefore the Local Funding requirement can be summarised as follows in Table 4.5 below. These figures include Additional Risk Layer in order to demonstrate funding for a “worst case” situation.

TABLE 4-55 FUNDING REQUIREMENTS (£M)

	Depot/Line 1 Modifications	BCCE/Trams	New Trams	Total
	£m	£m	£m	£m
Capital Cost	24.5	56.1	53.6	134.2
Funded By				
DfT re RFA Grant	16.9	27.4	38.9	83.3
Local Funding	7.6	28.7	14.7	50.9
Funding Total	24.5	56.1	53.6	134.2

- 4.12 The Metro cash flows are a primary revenue source against which Centro can secure borrowing thus reducing any potential burden or impact on the ITA's budget. With Centro taking the revenue risk, all revenues will accrue to Centro who will then pay an operating fee to the Operator of the system. The resulting cash flow will then be used to repay borrowing.
- 4.13 In order to consider the level at which Centro can borrow against future project cash flows Revenue forecasts have been prepared at both a Central Case and Low Case based on the Value for Money case with fare increases restricted to RPI. These revenues and operating costs from 2014 to 2022 for the first 10 years of the BCCE project are summarised in Table 4.6 below.

TABLE 4-6 CASH FLOWS AND REVENUE FORECASTS

£m's	Year									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Operating Costs	9.2	9.6	9.9	10.2	10.6	10.9	11.2	11.6	11.9	12.3
Operator Margin	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Operators Fee	9.9	10.3	10.6	11.0	11.4	11.7	12.1	12.4	12.8	13.2
Central Case Revenues	12.3	13.7	15.2	15.6	16.0	16.3	16.7	17.1	17.5	17.9
Low Case Revenues	11.8	12.9	14.1	14.5	14.8	15.2	15.5	15.9	16.2	16.6
Net Revenues - Central case	2.5	3.5	4.6	4.6	4.6	4.6	4.6	4.7	4.7	4.7
Net Revenues - Low case	2.0	2.7	3.5	3.5	3.5	3.4	3.5	3.4	3.4	3.4

- 4.14 Under a Central Case revenue forecast, net revenues are expected to be in excess of £4.5m per annum. Over a 25 year period at borrowing rates of 5% this income would support prudential borrowing of some £34m. Under a more prudent assumption of a Low Case revenue forecast net revenues would be expected to be in excess of £3m per annum. At this level they are sufficient to underpin some £24m of prudential borrowing.
- 4.15 Assuming however a more cautious position is taken with Centro borrowing £20m, then should revenues occur at the Central Case revenue level the outstanding debt of £20m would be repaid by the end of year 9 of operations i.e. 2022/23. The following sensitivities have also been considered:-
- 4.16 Should revenues occur at the level of the Low Case then under this scenario the £20m Centro borrowing would not be repaid until 2032/33.
- 4.17 If the Central Case revenues were assumed with the borrowing taken over the full period of 25 years, then the revenues can underpin additional prudential borrowing sufficient to finance £14m of extra nominal capital cost during the construction period. This is equivalent to a 10.4% increase in all capital costs (QCE+ARL, i.e. £134.2m).
- 4.18 A capital cost increase of 5.5%, as a proxy for any remaining optimism bias in the P80 reference case capital cost estimates would require additional prudential borrowing of £7.0m. This would increase Centro borrowing to £27.0m and at the Central Case revenue forecasts would be repaid in 2031/32.

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4.19 An alternative case takes current average fares and assumes a 3% annual increase in fare and applies this to the patronage figures assumed in the VfM case. These revenues and operating costs from 2014 to 2023 for the first 10 years of the BCCE project are summarised in Table 4.7 below.

TABLE 4-7 REVENUES AND OPERATING COSTS FRM 2014 TO 2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Patronage (Millions)	6.8	7.3	7.9	8.0	8.2	8.3	8.4	8.6	8.7	8.9
Average Fare (£'s)	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9
Revenues - Central Case (£m)	10.0	11.1	12.3	12.9	13.5	14.1	14.8	15.4	16.1	16.9
Operator fee (£m)	9.9	10.3	10.6	11.0	11.4	11.7	12.1	12.4	12.8	13.2
Net Revenues (£m)	0.1	0.8	1.7	1.9	2.1	2.4	2.7	3.0	3.3	3.7

4.20 This alternative analysis still supports £20m of Centro borrowings which would be repaid by 2031/32 under this scenario.

4.21 Assuming therefore a more prudent position, it is felt that conservatively project cash flows would support £20m of prudential borrowing by Centro, the funding package can therefore be revised as follows.

TABLE 4-8 FUNDING REQUIREMENTS (£M) - £20M BORROWED

	BCCE/New Trams QCE	BCCE/New Trams Inc ARL
	£m	£m
Estimated Capital Cost	127.3	134.2
Funded By		
RFA Grant	81.7	83.3
ITA Prudential Borrowing	21.4	26.7
Centro Capital Programme	4.2	4.2
Centro Borrowing against revenues	20.0	20.0
Total	127.3	134.2

- 4.22 Whilst some allowance for funding requirements needs to be made through the tendering period, in the main, funding will be raised during the construction period. The table below assumes any RFA grant will be drawn down in accordance with the current Regional Funding Allocation (RFA) profile. The project construction milestones payments will also need to reflect tenders and therefore may need to be adjusted. Using the existing project expenditure profile would give an expected drawdown of funds for BCCE is as follows.

TABLE 4-9 ANNUAL FUNDING REQUIREMENTS - £20M BORROWED

£m's	Prep/Adv	2010/11	2011/12	2012/13	2013/14
Estimated Capital Cost	12.6	9.0	26.7	32.2	36.2
RFA Funding	6.3	5.9	17.6	21.1	23.8
Centro Capital Programme	4.2	-	-	-	-
Centro Borrowing	-	-	6.00	6.00	6.00
ITA Prudential Borrowing	2.1	3.1	3.2	5.0	6.4
£m's	Prep/Adv	2010/11	2011/12	2012/13	2013/14

Funding/Affordability

- 4.23 Where the ITA prudentially borrows it is important to set out the implications of that borrowing on the ITA's Budget through increased debt charges. Under the funding scenario above the impact of the borrowing on the ITA budget can be set out in the table below. These figures exclude funding for the Additional Risk Layer.

TABLE 4-10 IMPACT OF BORROWING ON THE ITA BUDGET

£m's	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16 onwards
ITA Prudential Borrowing	5.2	3.2	5.0	6.4	1.6	-
Cumulative ITA Borrowing	5.2	8.4	13.4	19.8	21.4	21.4
Debt Charges*	0.13	0.34	0.54	0.83	1.46	1.93

* Note MRP of 4% pa has only been included from mid 2014/15 when the asset becomes operational. Interest is assumed to be 5% pa

- 4.24 One option to reduce the level of prudential borrowing and hence the impact of debt charges on the ITA's Budget would be to fund some of the project costs through a top slice of the Integrated Transport Block (ITB) budget. If a sum of £2.5m was earmarked for the Metro during the construction period this would substantially reduce the impact on the ITA budget as follows.

TABLE 4-11 IMPACT OF TOP SLICE ON FUNDING

£m's	Prep	2010/11	2011/12	2012/13	2013/14	2014/15	Total
Estimated Capital Cost	12.6	9.0	26.7	32.2	36.2	10.6	127.3
RFA Funding	6.3	5.9	17.6	21.1	23.8	6.9	81.7
Centro Capital Programme	4.2	-	-	-	-	-	4.2
Centro Borrowing	-	-	6.0	6.0	6.0	2.0	20.0
ITB Top Slice	-	2.5	2.5	2.5	2.5	-	10.0
ITA Prudential Borrowing	2.1	0.6	0.6	2.6	3.9	1.7	11.4

4.25 The impact on the ITA budget can therefore be set out as follows.

TABLE 4-12 IMPACT OF BORROWING ON ITA BUDGET - WITH TOP SLICE

£m's	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16 onwards
ITA Prudential Borrowing	2.7	0.6	2.6	3.9	1.7	-
Cumulative ITA Borrowing	2.7	3.3	5.9	9.8	11.4	11.4
Debt Charges*	0.07	0.15	0.23	0.39	0.76	1.03

* Note MRP of 4% pa has only been included from mid 2014/15 when the asset becomes operational. Interest is assumed to be 5% pa

Impact on the Levy

4.26 The Tables above show the impact of ITA borrowing on Debt Charges and consequently the ITA's budget. The ITA will need to consider how it will meet that cost through its budget. Certainly in the first two to three years it would be expected that the ITA would manage its budget to accommodate these costs. However, the Table 4.13 shows the impact on the Levy should the ITA pass on the cost directly to the Districts.

TABLE 4-13 IMPACT OF ITA BORROWING ON THE LEVY

No LTB Top Slice

£m's	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16 onwards
Cumulative ITA Borrowing	5.2	8.4	13.4	19.8	21.4	21.4
Debt Charges as above	0.13	0.34	0.54	0.83	1.46	1.93
Impact on Levy	-*	-*	0.40%	0.61%	1.07%	1.42%

With LTP Top Slice

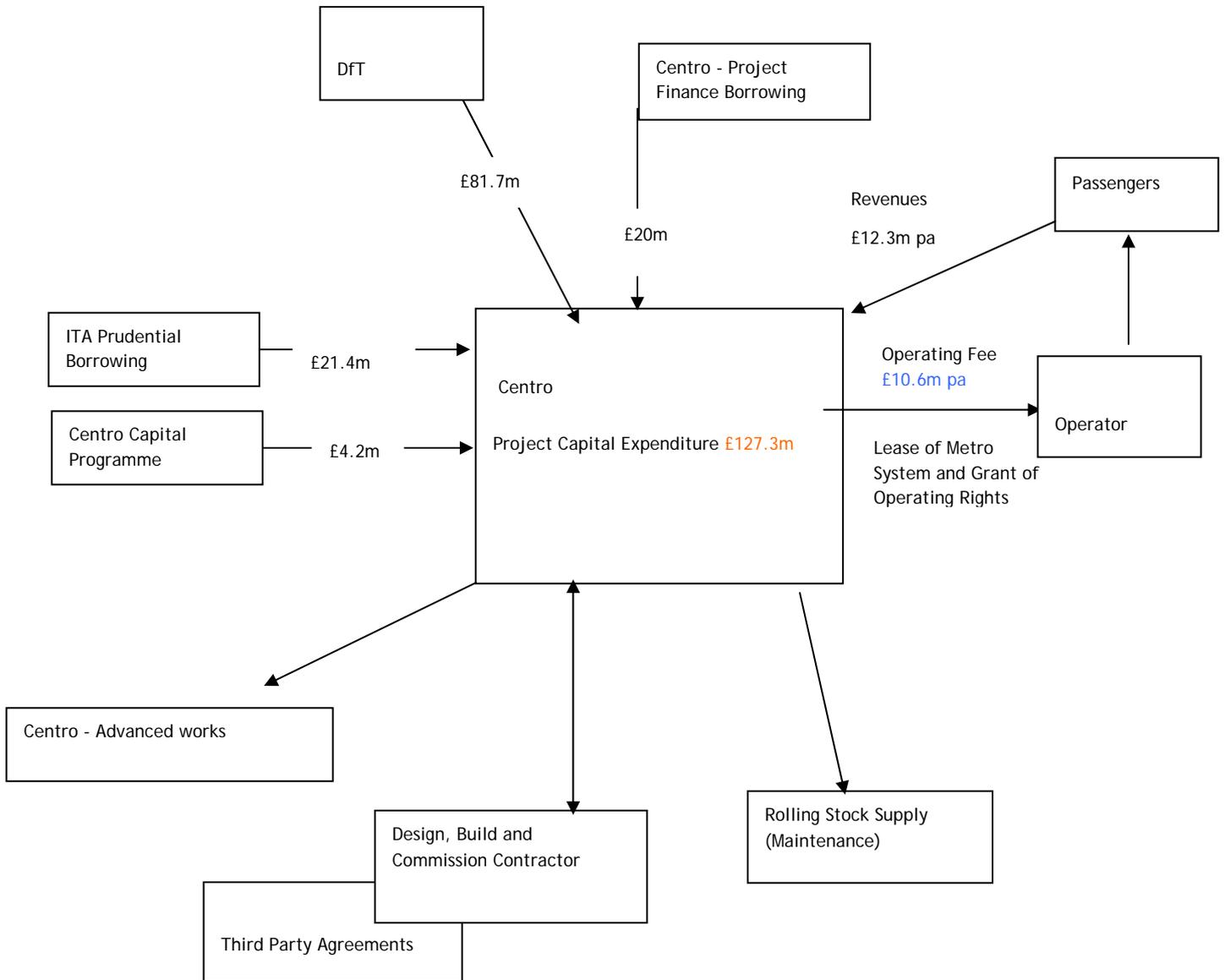
Cumulative ITA Borrowing	2.7	3.3	5.9	9.8	11.4	11.4
Debt Charges as above	0.07	0.15	0.23	0.39	0.76	1.03
Impact on Levy	-*	-*	-*	-*	0.56%	0.76%

* managed from existing budget

Additional Risk Layer

- 4.27 If the Additional Risk Layer costs of £6.9 million are included then the local funding contribution is increased by £5.3 million. By definition, this additional funding would only occur at the completion of construction thus affecting the Authority from 2015/6 onwards. This additional £5.3 million borrowing would increase the annual charge by £0.47 million or 0.34% of the levy.
- 4.28 The anticipated funding flows based on the financing flows above are summarised in Figure 4.2.

FIGURE 4.2 FUNDING FLOWS



Section 151 Officer sign-off

4.29 Appendix C4 includes a letter from the Chief Finance Officer for the West Midlands Integrated Transport Authority confirming that:

- | The cost estimates are accurate and represent the best estimates based on currently available information;
- | Centro has the means to accept financial liability for the scheme going ahead;
- | Centro will meet the required local contribution as set out in this MSBC; and
- | The DfT have underwritten the exchange rate risk relating to the purchase of trams.

5 Governance

Overview

- 5.1 This chapter sets out the proposed Governance Structure for Centro's Metro expansion programme together with a Programme Team structure to ensure effective delivery.
- 5.2 The purpose of establishing a governance framework for the Metro Programme is to:
- | Provide assurance to Centro and partners of the effectiveness and efficiency of the Metro Programme;
 - | Provide a basis for the implementation of high level working arrangements and practices; and
 - | Formalise reporting structures which will allow the performance of the Metro Programme to be monitored and measured.
- 5.3 The Governance proposal is in line with the requirements of the Department for Transport (DfT) for the delivery of major capital projects to which it contributes funding. It also aligns with guidance from the Office of Government Commerce (OGC).
- 5.4 The programme team structure is based upon structures utilised in the delivery of other major programmes in the transport sector.
- 5.5 The governance arrangements set out for the Metro Programme will be established under the current Centro governance arrangements as prescribed in accordance with Centro's Constitution.
- 5.6 The Constitution outlines how Centro operates, how decisions are made and the procedures to be followed in order to ensure that Centro operates efficiently, effectively and in a transparent and accountable manner. Further development of these structures will be required to ensure full compliance with Centro's Standing Orders and Constitution.
- 5.7 The Governance and Programme Team Structures address the following issues:
- | Leadership;
 - | Organisation;
 - | Resource management;
 - | Monitoring and control;
 - | Quality management;
 - | Stakeholder engagement;
 - | Risk and issues management;
 - | Specifications; and
 - | Benefits realisation.
-

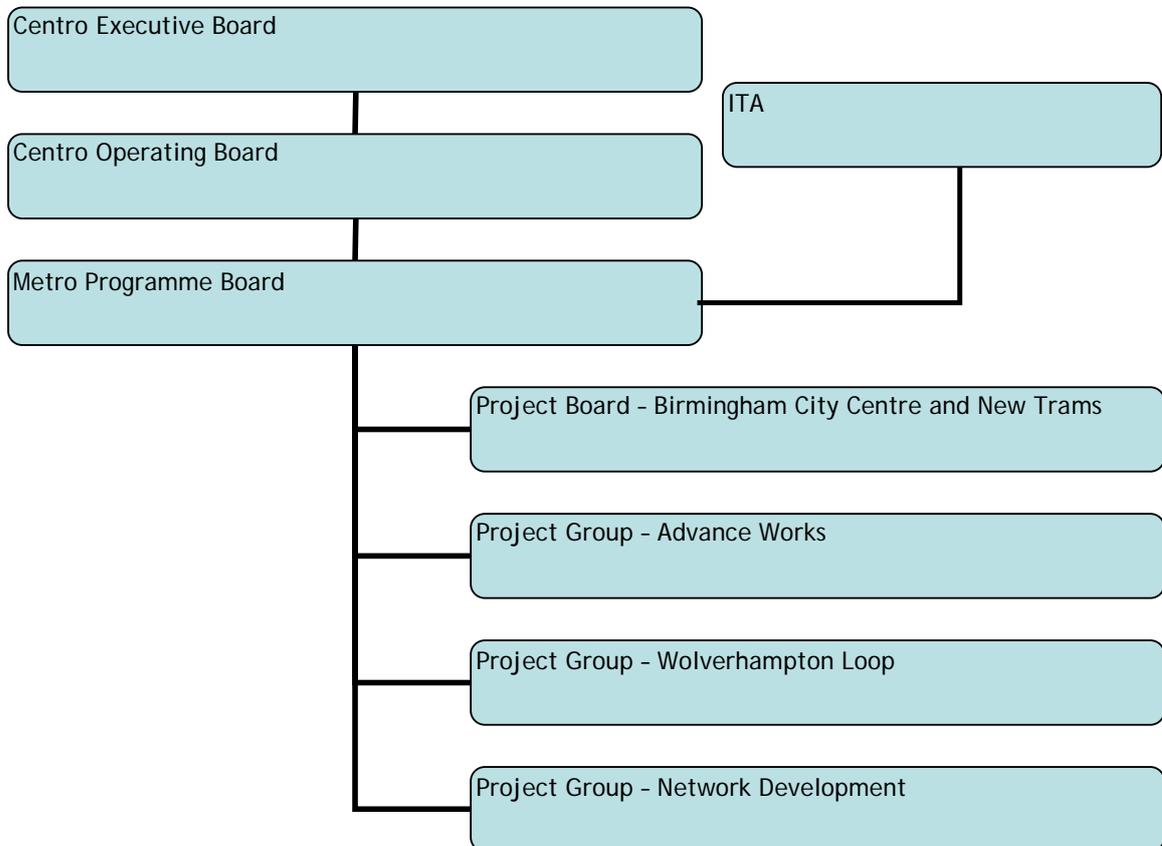
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- 5.8 All of the above must be carried out in an environment which allows for predictable outcomes which provide certainty for executive management in a changing political and economic climate.
- 5.9 Centro has begun the process of transition towards implementation of the Programme Team Structure by confirming key team appointments as set out in this Business Case. The early appointment of the Programme Executive will allow him to shape the structure into the best-fit for delivery taking into account current resources. The remainder of the posts will be filled following grant of Conditional Approval.

Governance Structure

- 5.10 Set out below is the proposed overall Governance structure for the Metro and how each of the groups report into existing structures i.e. Executive and Operating Boards.

FIGURE 5.1 GOVERNANCE STRUCTURE



- 5.11 Centro has assembled a strong project team with a mixture of in-house project managers and technical and operational light rail experts together with a strong team of supporting consultants and advisors covering all aspects of the development and delivery of this project.
- 5.12 Once Conditional Approval is obtained the current core Centro team will be enhanced to ensure a robust, programme managed, delivery focused organisation is in place, supported with the correct resources, skills and leadership.

- 5.13 Further details of the terms of reference and detailed governance arrangements, the Programme Team Structure and the current team's wide delivery experience are set out in Appendix C5.
- 5.14 In accordance with project best practice Centro's named Senior Responsible Officer for the project is Nigel Pennington, Rail and Rapid Transit Director and a member of Centro's Operating Board.

6 Project Planning

Project Plans

- 6.1 Centro's Project Plans are included at Appendices C6 (BCCE) and C7 (Trams & Depot) and set out the roles and responsibilities of the project team within the current organisational structure and how they will utilise defined processes and procedures to achieve the project objectives with respect to time, cost, quality and performance.
- 6.2 The Plans have been developed in keeping with OGC Guidance and general project management best practice within the construction industry. They address the key issues raised in the DfT Guidance. The Plans are kept under continual review and will be amended as the procurement phase progresses to ensure best fit with project objectives and regulatory control and to reflect the enhanced Governance structure and Programme Team organisation as it develops.
- 6.3 The Plans consist of the following components:
- | Project Organisation & Responsibilities;
 - | Project Workstreams (Scope Definition);
 - | Project Collaboration & Authorisation Procedures;
 - | Baseline Project Programme;
 - | Risk Management;
 - | Procurement;
 - | Quality Assurance & Document Control;
 - | Reporting Requirements;
 - | Financial Control; and
 - | Health & Safety.

Project Programme

- 6.4 Throughout the development stage of the project Centro has maintained a fully detailed working programme /plan for the project implementation as an integral component of the Integrated Transport Authority's development planning processes. Centro has also developed a detailed construction plan and programme. The programmes address the following key issues:
- | Key dependencies;
 - | Critical paths; and
 - | Outputs and milestones.
- 6.5 The rationale behind the construction programme, and Centro's approach to the above key issues, is described in detail in the Programme Rationale reports included as Appendices C2 (BCCE) and C3 (Depot). The overall programme is governed by the durations of tram procurement, with depot works requiring to be completed prior to

the delivery of new trams and the Birmingham City Centre Extension infrastructure completion following their acceptance into service. The overall scheme programme is presented below.

FIGURE 6.1 PROCUREMENT PROGRAMME

Midland Metro Extension – High Level Programme						
Key Milestones	2009	2010	2011	2012	2013	2014
DfT Conditional Approval	[Bar]					
Issue Tram OJEU	[Bar]					
Issue Tram ITN		[Bar]				
Issue Depot OJEU		[Bar]				
Issue Depot ITN		[Bar]				
DfT Final Approval		[Bar]				
Award Tram & Depot Contracts		[Bar]				
Issue BCC OJEU		[Bar]				
Utilities Diversions		[Bar]		[Bar]		
Issue BCC ITN			[Bar]			
Award BCC Contract				[Bar]		
Complete Depot Works			[Bar]			
First 4 Trams in Line 1 Service			[Bar]			
All New Trams in Line 1 Service					[Bar]	
Complete BCC Extension Works					[Bar]	
Trams in Service Through BCC						[Bar]

Tram Procurement

6.6 Centro intends to procure a standard tram to reduce risk. The specification, design and manufacture, delivery and commissioning of new trams has the longest overall timeline for the programme and therefore, to achieve the earliest implementation date, requires to be commenced first. The procurement steps, in summary, are:

- | A PIN Notice to alert the market to the forthcoming competition was issued in the OJEU in March 2009.
- | Documentation for the OJEU Notice to enable Centro to pre-qualify interested parties has been prepared and is ready to issue subject only to DfT approval to do so.
- | Specification work is scheduled to be concluded ready to issue an ITN to those pre-qualified to take part in the competition.
- | The ITN process will include the requirement for specific data to be provided early through a series of pre-bid meetings so that as far as is reasonably possible any particular requirements for a tram can be accommodated within the designs for the depot where they will be maintained.
- | Preferred Bidders will be invited to submit a BAFO unless there is a clear choice of manufacturer. Certainty about any changes required either to the depot

designs or the existing Line 1 will be achieved at this stage and will facilitate the selection of the most economically advantageous offer.

- | The selection of a manufacturer will enable the preparation of a Final Business Case for the scheme and its subsequent issue to the DfT. The submission of this will depend upon the selection of a preferred bidder for the Depot works such that the full financial implications for the scheme are certain.
- | Award of contract for the Trams will be announced after receipt of approval to do so from the DfT.

Depot modifications & Line 1 modifications

6.7 A carefully considered transition plan has been developed to ensure that new trams can be delivered and commissioned into the existing depot and introduced on to the Line 1 route with minimal disturbance to service operation.

- | Design work is expected to be completed early in 2010 and will thereafter require finalising to incorporate the salient technical requirements of the preferred tram manufacturer. This may be to the depot design or to the Line 1 infrastructure as required to operate and maintain the chosen tram.
- | The Depot ITN will provide for the issue of firm tram design data obtained during the Trams ITN stage.
- | Selection of a preferred bidder is scheduled to coincide with that of the Trams such that the final business case can be prepared for DfT approval.
- | Award of the depot works and tram supply order will be announced together after receipt of DfT approval to do so.
- | Work to the depot must be completed in sufficient time to be able to receive the first new tram. It is therefore scheduled to be complete two months in advance of the target delivery date.

Birmingham City Centre Infrastructure

6.8 The project planning for the extension of Line 1 has identified the following key issues:

- | The City Centre extension is dependant upon the implementation of the separate Transforming Bus Travel - Birmingham City Centre Project which diverts buses from the Metro alignment.
- | Utility diversion works require to be undertaken prior to main works construction and detailed discussions are being held with Birmingham City Council and the bus companies to formalise the intended approach to co-ordination of city centre works.
- | The mainline New Street 'Gateway' station is the terminus point for the extension and close co-ordination between the respective teams to co-ordinate designs, determine pedestrian routing and OHL fixing locations etc is in place.
- | The alignment has been based on a generic tram and when the preferred tram supplier's data is available this will require validation.

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- | Prior to July 2010 a Material Operation will be commenced in order to preserve the TWA Order planning consents and Notices to Treat will be issued to ensure that the requisite land can be acquired.
- | DfT final approval of the scheme will be sought in November 2010 prior to the receipt of tenders for BCCE based upon a capped contribution for this element of the scheme in order to give DfT cost certainty.
- | Construction works are planned in phases to keep impact on the City Centre to a minimum and enable works to proceed around city centre Christmas period works restrictions.
- | Full design will be completed before the procurement process commences, reducing the risks to programme and cost.
- | Sufficient new trams will be required to run the Line 1 service and to commission the extension infrastructure at the same time and the tram procurement programme provides for this. Trams are scheduled to begin public service on the extension in November 2014.

6.9 The key milestones for the component procurements in tabular form are:

Key Milestones	Tram Supply	Depot Modifications	BCC Infrastructure
DfT Conditional Approval	Dec 09	Dec 09	Dec 09
Issue OJEU Notice	Oct 09	Feb 10	Jul 11
Preserve TWA Powers	N/A	Mar 10	July 10
Issue ITN	Feb 10	May 10	Nov 11
Select preferred bidder	Oct 10	Oct 10	Dec 12
Gateway 3 Review	Sept 10	Sep 10	Sep 10
DfT Final Approval	Nov 10	Nov 10	Nov 10
Award Contracts	Nov 10	Nov 10	Dec 12
Complete Depot Works		Aug 12	
Deliver first Tram	Sept 12		
First Trams in Service	Dec 12		
Existing Trams Decommissioned	Jun 13		
Trams in Service in BCC	Nov 14		Nov 14

6.10 The critical path on the programme is shown on the high level programme provided in Appendix C8. The principal elements of work on the critical path are:

- | Completion of the design of the works;
- | Completion of the contract documentation;
- | Procurement process up to Financial Close; and
- | Preparation, submission and approval of Full Business Case.

6.11 Individual programmes for BCCE and New Trams/Depot are shown in Appendices C9 and C10.

Previous Project experience

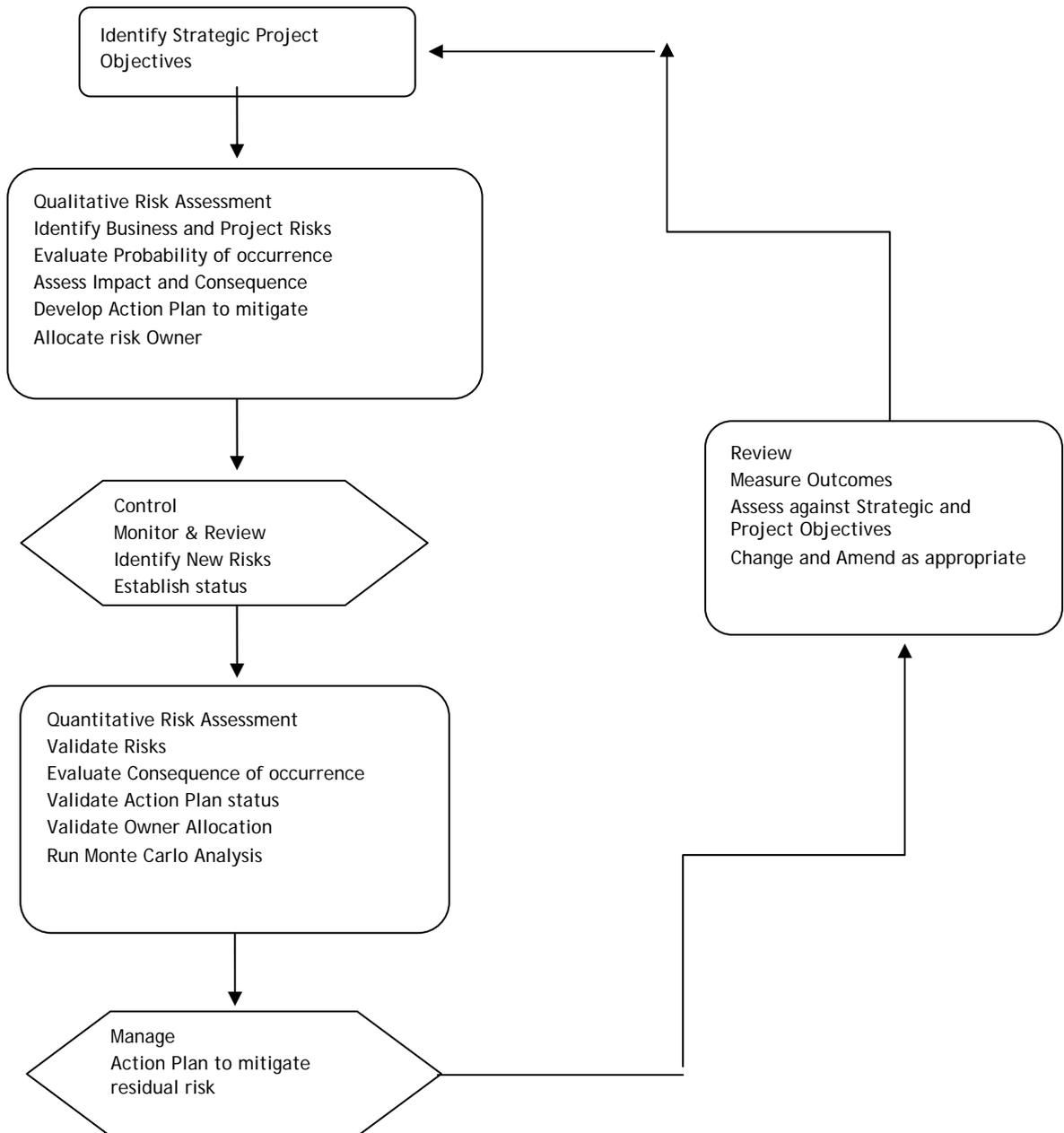
- 6.12 Centro has relevant experience in applying the processes and disciplines summarised above to similar projects. This is illustrated by the successful development and implementation of Midland Metro Line 1, which opened to the public in May 1999 at a total cost of £145 million.
- 6.13 Centro is in the process of assembling a project team. To ensure a strong team this will be made up of a mixture of in-house project managers and technical and operational light rail experts together with a strong team of supporting consultants and advisors covering all aspects of the development and delivery of this project. The current team roles and responsibilities are set out in the Project Management Plans, and these will evolve in accordance with the proposed Governance and Programme Team structures. The key technical, legal and commercial support roles are currently being delivered by:-
- | | |
|-------------------------|---------------------|
| Technical | Mott MacDonald |
| Legal/Procurement | Pannone & Partners |
| Transport Planning | Steer Davies Gleave |
| Programme Planning/Risk | CJ Associates |
- 6.14 Once Conditional Approval is obtained the current core Centro team will be enhanced to ensure to a robust, programme managed, delivery focused organisation is in place, supported with the correct resources, skills and leadership.

7 Risk Management

Risk Management Strategy

- 7.1 The Risk Management Strategy is a proactive process that provides focus for workstream allocation, control and management of project risk. It is a continual process through the project lifecycle and at key points has been used to determine appropriate project costings through a quantified risk analysis and the assessment of appropriate Optimism Bias additions.
- 7.2 Risk Management has been taken forward in two discrete stages:
- | As part of the Metro Phase 1 Projects comprising this Business Case; and
 - | As stand alone projects.
- 7.3 The migration from one to the other has been achieved through a series of dedicated workshops to ensure that all issues arising from the development of the scheme comprising this Business Case were fully considered and validated for assessment and incorporation into the current process.
- 7.4 The Risk Management Process is outlined in Figure 7.1.
- 7.5 Centro's Risk Management Strategy, as set out in Appendix C11, explains how risks are identified and managed. This process will be continued through the procurement of the projects comprising this Business Case in order to reflect the balance of risk within the ultimate contracts. This programme currently includes the following:
- | Continuing design development;
 - | Further fully detailed site investigations; and
 - | Negotiation of agreements with third parties, including span-wire fixing agreements to avoid programme risk as experienced on other system procurements.
- 7.6 As part of the risk management strategy, appropriate consideration has been given as to how risks are to be allocated to future partners in the scheme and this allocation has been broadly defined within draft contract documents. The guiding principle behind this risk allocation is to ensure that risks are allocated to the party who is most able to effectively manage that risk.

FIGURE 7.1 RISK MANAGEMENT STRATEGY



7.7 A proactive risk management procedure is in operation which ensures that risks are continuously identified, owners assigned and mitigation measures put in place. Regular reviews check the status of each risk and regulate their control and mitigation.

7.8 Centro has implemented a Risk Management Strategy to focus workstream allocation, control and manage project risk and thereafter to determine appropriate project costings through a quantified risk analysis and Optimism Bias mitigation process.

7.9 A summary of the project risk registers is included in Appendix C16.

Gateway Reviews

- 7.10 In July 2006 the Phase 1 Metro Extensions Projects comprising this Business Case were reviewed by the 4Ps.
- 7.11 In respect of risk, the review report stated:
'Whilst risks on such a project are numerous the project team demonstrated a strong approach to identifying managing and mitigating such risks. This was considered as following good practice.'
- 7.12 A further Gateway Review was undertaken in May 2009 for the projects comprising this Business Case, together with the other Centro Midland Metro projects included as named schemes within the West Midlands Regional Funding Allocation. As a programme-wide review this took into account the wider risks associated with projects at a lesser degree of readiness for procurement than those which are the subject of this Business Case. The overall assessment for the programme was "Amber".
- 7.13 The Gateway Review identified a number of areas for action in its recommendations, focussed around the areas of governance, programme management and reporting and risk management in relation to delivery of the programme and overall business risks. An action plan has been developed and is being implemented to meet all the review team's recommendations. The action plan is summarised in Table 7.1 overleaf.
- 7.14 The 4Ps team recommended that the next Review should follow DfT Conditional Approval.

TABLE 7-1 GATEWAY REVIEW ACTION PLAN

Summary recommendation	Action plan and progress
The Programme owner in conjunction with the Programme Board should define and agree roles and responsibilities in the key areas of ownership and management.	Roles and responsibilities and the Governance structure for the Programme are now defined in the business case. The final changes to the structure will be made between submission of the business case and Conditional Approval. Status: substantially complete
The Programme Owner should ensure that the scope and phasing of what is to be delivered is understood and agreed.	The scope of the City Centre Extension and Fleet Expansion Programme is now defined in the business case. Other elements of future Metro expansion are being managed under a separate Governance regime. Status: complete
The Programme Owner should ensure that an appropriate structure based around deliverables and identifying roles and responsibilities is put in place.	The future structure for implementation of the Programme has been designed and is included in the business case. . The final changes to the structure will be made between submission of the business case and Conditional Approval. Status: substantially complete
The Programme needs to develop a procurement strategy that is consistent with the business case and demonstrates a clear understanding of the commercial and operational implications for Centro.	The Procurement Strategy has been signed off by the Metro Board and is included in the Business Case. Status: complete
The Programme should adopt a robust approach to programme wide management of life-cycle risks, issues, assumptions and decisions.	Programme level consideration of risk has been included in the business case. Management, recording and reporting of risks, issues, assumptions and decisions will be routinely monitored throughout the programme implementation phase. Status: immediate actions completed, ongoing management task
The Programme Owner needs to ensure a more robust and coordinated approach to development of the key products required for securing approval.	The development of the products for submission of the business case has been monitored against a progress tracker to identify issues and put in place remedial actions where necessary. An integrated Primavera schedule of all Programme tasks will be put in place for the implementation phase. Status: immediate actions completed, ongoing management task
The Programme Owner should examine the roles of the consultants to ensure that they are required, are providing high quality advice, are adding value and are being managed and led appropriately.	The team for the implementation phase of the programme is being re-worked around the new structure to ensure that all staff and consultants can provide the best value and are appropriately managed and led. Finalisation of staffing will take place between business case submission and Conditional Approval. Status: progressing to schedule
The Programme Owner should ensure that the programme is appropriately prepared to deliver through a robustly managed programme approach once funding is secured.	The Programme Plan for implementation is being implemented (see comments regarding structure and reporting above). This will be fully in place prior to Conditional Approval. Status: progressing to schedule

8 Stakeholder Management

Stakeholder Management

8.1 This chapter describes the arrangements Centro has put in place to communicate effectively with and manage the inputs from key local stakeholders. For the purposes of this document, 'stakeholders' are defined in the same way as in DfT Guidance and include those parties whose input is key to the success of the project, as well as those who are just affected by the project. Stakeholders will therefore include the local authority, utility companies, Line 1 passengers, landowners and local residents.

8.2 Three categories of stakeholders have been identified:

- I **Category A** - These are the stakeholders whose input is essential to the successful implementation of the projects comprising this Business Case. Centro entered into legal agreements with these stakeholders prior to submitting the Outline Business Case.
- I **Category B** - These are parties who will be directly affected by the projects comprising this Business Case and those with whom Centro has already or will endeavour to enter into a contractual relationship. These stakeholders include:
 - I Utility companies;
 - I Landowners and occupiers whose property/business will be acquired;
 - I Landowners to whose buildings span wires will be attached; and
 - I Parties who were offered undertakings by Centro during the TWA process.
- I **Category C** - These are parties who have expressed an interest in the projects comprising this Business Case and whom Centro will wish to keep informed on the progress of implementation. These stakeholders include:
 - I Local residents and businesses;
 - I Line 1 passengers;
 - I Local interest groups; and
 - I Objectors and supporters to the TWA Order; and parties adjacent to BCCE who were issued notices as part of the TWA process.

8.3 Current and potential users of the extensions and Line 1 are also included in this category.

8.4 The arrangements Centro has put in place to communicate with and manage the above categories of stakeholder are discussed in the following sections.

Category A Stakeholders

8.5 The Category A stakeholders are:

- I Department for Transport;
- I Birmingham City Council;

- | Integrated Transport Authority Members;
- | Network Rail;
- | RT Group Development (Snow Hill) Ltd (Ballymore); and
- | Line 1 operator (National Express).

8.6 Centro has entered into detailed agreements with the key external stakeholders as summarised below.

Birmingham City Council

8.7 Birmingham City Council has a key involvement at several levels: as local planning authority, local highway authority, landowner, funding contributor and co-promoter of the New Street Gateway project.

8.8 A detailed agreement has been approved by the City Council's Cabinet (13 November 2006), addressing the implementation of the full TWA scheme. This is currently being reviewed and updated for the current scheme. The key features of this agreement are summarised below:

- | Centro will construct the Metro extension in accordance with the agreed plans, programme and methodology;
- | To aid this process a Street Design Guide has been drafted;
- | The Council will provide land in its ownership to Centro as specified in its agreement;
- | The Council will implement the complementary measures (these are works adjacent to the Metro works which will enhance the effectiveness of the Metro; amendments to loading bays, enhanced access routes etc);
- | The Council will implement highway closures/diversions as agreed; and
- | Arrangements for highway maintenance, traffic control and tram priority measures will be implemented as agreed.

Network Rail

8.9 Centro and Network Rail have signed an agreement governing the implementation of the BCCE through Birmingham city centre. The principal features of the agreement are:

- | Network Rail and Centro to work together on the interface between the proposed New Street Station re-development and BCCE project;
- | Centro undertakes to release platform 4 at Snow Hill Station for rail network use; and
- | Network Rail is afforded protective provisions as granted in the TWA Order.

8.10 Birmingham City Council, Network Rail and Centro are working closely together to integrate the New Street Gateway and Metro projects, which interface closely in Stephenson Street.

RT Group Development (Snow Hill) Ltd (Ballymore)

8.11 RT Group Development (Snow Hill) Ltd, a development company owned by Ballymore, is the developer of the site adjacent to Snow Hill Station. The Metro traverses this site, passing in between the proposed development and Snow Hill Station and the existing multi-storey car park. Centro has signed an agreement with the developer which:

- | Required Centro to exercise its powers over the land in a manner which is consistent with Ballymore development proposals; and
- | Required Ballymore to construct, at its own cost, the infrastructure required to carry the Metro across the development site when it commenced development of the site in 2007. This constituted a significant contribution to the project, with an estimated cost at completion of £9.8m.

Category B stakeholders

8.12 Category B stakeholders include utility companies, relevant statutory bodies, other affected parties such as emergency services and traffic bodies, affected landowners and other parties who were given undertakings during the TWA process. Centro has identified all of these parties and has been in communication with them. Further information on these stakeholders is presented below.

Utilities

8.13 A comprehensive consultation programme has been undertaken with utility companies whose apparatus is affected by the proposals, resulting in the receipt of C4 level cost estimates and programme. Notices have been issued by Centro under Section 85(2)a of the New Roads and Streetworks Act providing protection against diversion costs for new apparatus laid in the highway over which the tramway will run.

Affected Landowners and Occupiers

8.14 All landowners and occupiers affected by the projects comprising this Business Case have been identified and placed in the following categories:

- | Land acquired permanently;
- | Land occupied temporarily - the extent of the work has not yet been identified definitively as this is subject to the detailed design to be carried out by the contractor;
- | Access rights affected permanently;
- | Access rights affected temporarily - the extent of the works has not yet been identified definitively as this is subject to the detailed design to be carried out by the contractor;
- | Property affected by span-wire attachments - affected properties have not yet been identified definitively as this is subject to the detailed design of the overhead line equipment, which is expected to be carried out by the contractor. However, Centro has entered into contracts with the owners of a significant number of affected properties as identified in the TWA Order to speed up the construction process; and

- | Accommodation or safeguarding works to property - affected parties have been identified during the TWA process, but again the extent of works to be undertaken is subject to the detailed design work carried out by the contractor.

Category C stakeholders

8.15 Category C stakeholders include but are not limited to the following:

- | Key businesses;
- | Residents and residents associations;
- | Local councillors;
- | Owners/occupiers of frontages;
- | Metro Line 1 passengers;
- | Taxi associations;
- | Local traders groups; and
- | Bus Operators and passengers.

Stakeholder Communication Plans

8.16 Centro has prepared draft Stakeholder Communication Plans and will lead the stakeholder communication processes. The contractors appointed to design and construct the works will have a key role in carrying out communications regarding the works programme with stakeholders in Birmingham and on Line 1. Therefore the Plans will be finalised in conjunction with the contractors and will be completed during the negotiation of the contract. The current drafts of the plans are included in Appendices C14 (BCCE) and C15 (Trams).

8.17 The Plans will define how communications with stakeholders and the general public will be managed and will set out the interfaces between Centro, the contractors and the relevant local authority. The Plans will also address the communication with stakeholders and the public during the utility diversion works, parts of which will be undertaken in advance of the main works. During the finalisation of the Plans, Centro will ensure that the following key matters are addressed:

- | All parties who may be affected by the projects comprising this Business Case or have an interest in its implementation will be identified and recorded on a database. This will build on the work already undertaken by Centro and summarised above;
- | The stakeholder database will identify the interest that each stakeholder has in each project and which of the above categories they belong to, what communications they should receive during the course of the project implementation and the timing of such communication;
- | The Plans will also identify any input required from the stakeholder and the timing of that input and will set out how the project will manage the delivery of that input. Where relevant, the Plans will also describe the outcome desired by the stakeholder and how the project will deliver that outcome;

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- | The Plans will identify those stakeholders who have been offered undertakings and will describe the management methods to be adopted to ensure that fulfilment of the obligations in the undertakings is monitored effectively;
- | The database will be updated so as to record all communications, whether by telephone, e-mail, and letter or at presentations, with each stakeholder;
- | The Plans will ensure that all those who are, or may be, affected by the works are advised in good time of the progress of the works and how they may be affected. The Plan will set out exactly what information will be sent to each stakeholder at each stage of the project;
- | The Plans will ensure that the parties engaged in implementing the projects comprising this Business Case understand their roles so that communications with the public are co-ordinated, consistent and avoid duplication;
- | The Plans will ensure good records are kept so that queries from the public are responded to appropriately and are tracked effectively;
- | Information centres and websites will be kept up to date with accurate and informative information;
- | Information prepared for distribution to stakeholders or the public will be accurate, up to date, informative and attractively produced so that the image of the project is enhanced as far as possible; and
- | Appropriate and up to date information will be provided to the media in a manner that ensures there is no duplication or misinformation and that the project is promoted positively.

9 Monitoring & Evaluation

Overview

- 9.1 Centro recognises that a key component in the successful implementation of the project, and a requirement of the DfT Guidance on Value for Money, will be the continuous monitoring of the project to ensure that key objectives are being met and the projected benefits are being delivered. Following completion of Midland Metro Line 1, Centro carried out a similar exercise, and the lessons learned have been applied to the development of the projects comprising this Business Case. The same process will be applied during and after, allowing further lessons to be learnt and applied to subsequent development of the Metro network.
- 9.2 This section summarises the key objectives of the post implementation review and outlines the arrangements Centro will put in place to carry out the review, as well as identify where deficiencies may exist and to initiate appropriate action to correct such deficiencies.
- 9.3 Due to the long lead in time for projects of this nature, it is premature to establish a fully detailed management plan at this stage. Therefore an outline proposed methodology has been set out; the fully detailed methodology will be described in a detailed Benefits Realisation Plan, which will be developed during subsequent stages of implementation.
- 9.4 The Benefits Realisation Plan will also include an assessment of what the projects comprising this Business Case have added against what might have happened if it had not been implemented: the 'do minimum' scenario.

Key Objectives

- 9.5 The Benefits Realisation Plan will aim to monitor the achievement of the key objectives of the projects comprising this Business Case. These key objectives are presented in Chapter 5 in the Strategic Case and are set out below:
- | Support the growth and competitiveness of the economy of Birmingham and the West Midlands through improving connectivity, increasing capacity, reducing congestion and supporting the viability of existing and new city centre developments;
 - | Support the sustainable growth of Birmingham, and contribute to tackling climate change, through reducing the carbon impact of transport;
 - | Promote equality of opportunity by enhancing access to jobs and enabling greater participation in a range of leisure, retail and health activities through improving transport accessibility between the city centre and some of the most deprived areas of the West Midlands;
 - | Contribute to the achievement of local air quality targets, and improvements in the Birmingham AQMA; and
 - | Contribute to improving the overall safety, security and health in the West Midlands, through reducing accidents and improving security on the public transport network.

Base Case

- 9.6 In order to monitor effectively the performance of the projects comprising this Business Case against the key objectives it will first be necessary to establish a base case against which performance can be measured. It is anticipated that this will need to be done just prior to commencement of operations on the system, so that the comparison of 'before' and 'after' scenarios uses the most up to date 'before' data.
- 9.7 It is likely that the baseline data will comprise the following:
- | Environmental data;
 - | Existing patronage on Line 1, buses and national rail on routes that are likely to be affected by the introduction of the tram extension;
 - | Traffic levels on key highways;
 - | Junction performance including queues at junctions where highway modelling indicates measurable change;
 - | Mode choice surveys; and
 - | Safety and accident records.
- 9.8 Wherever possible Centro will use information already available from bus and rail operators and local authorities as part of the regular data gathering process in order to avoid incurring additional costs and adverse impacts on the public. It may also be necessary in certain instances to obtain some baseline data prior to the start of construction to ensure that construction activities do not impact on the validity of the baseline data.
- 9.9 Following implementation of the scheme, Centro will introduce a monitoring and evaluation regime. The purpose of this regime will be to monitor performance of the system so as to ensure:
- | The scheme is performing as intended;
 - | Any problems and/or possible improvements are identified;
 - | Key performance indicators are monitored;
 - | Established objectives are being achieved; and
 - | The scheme continues to represent value for money.
- 9.10 The evaluation will enable the performance of the system to be continually optimised.
- 9.11 It will also provide key data that will be applied to the development and implementation of future extensions to the Metro, as envisaged in the wider transport plans for the West Midlands and enable lessons to be learnt which can be disseminated to other transport projects.
- 9.12 As noted above, Centro considers that it is premature to define the parameters that will be monitored and the precise evaluation methodology at this stage. Before the monitoring regime is introduced, consideration will be given to the availability of data, the practicality of obtaining it, whether it will properly reflect the indicators and the cost of obtaining it.

- 9.13 Indicators and targets will be subject to continuing review to ensure they properly reflect the performance of the project against the objectives. Potential indicators, measures and data for evaluation are summarised in Table 9.1 overleaf.

TABLE 9-1 POTENTIAL INDICATORS, MEASURES AND DATA FOR EVALUATION

Objective	Measures	Monitoring/Evaluation
<p>Support the growth and competitiveness of the Birmingham and West Midlands' economy through improving connectivity, increasing capacity, reducing congestion, and supporting the viability of existing and new city centre developments.</p>	<p>JT savings (PT connectivity) Highway congestion benefits as modelled Additional city centre capacity Connectivity to developments</p>	<p>Origin-Destination surveys Annual patronage surveys Percentage of people by specified date within 400m of route catchment area Percentage of people within key locations using public transport. Annual surveys at key locations</p>
<p>Support the sustainable growth of Birmingham, and contribute to tackling climate change, through reducing the carbon impact of transport.</p>	<p>Carbon reduction Increased modal split in favour of public transport as modelled Reduced vehicle emissions Supporting sustainable transport</p>	<p>Meet NAQs targets for all pollutants Road Traffic Reduction Act Targets Traffic Count Surveys Route wide household surveys every five years Programme of Air Quality monitoring Modelling of before and after emissions Percentage of people within key locations using public transport. Annual surveys at key locations</p>
<p>To promote equality of opportunity by enhancing access to jobs, and enabling greater participation in a range of leisure, retail and health activities through improving transport accessibility between the city centre and some of the most deprived areas of the West Midlands.</p>	<p>Accessibility indicators - journey time mapping with facilities overlaid, affordability</p>	<p>Percentage of people within 400m of stop Percentage of employees within 400m of stop Percentage of deprived people within 400m of stop</p>

Objective	Measures	Monitoring/Evaluation
<p>Contribute to the achievement of local air quality targets, and improvements in the Birmingham AQMA.</p>	<p>Reduction in traffic as modelled</p> <p>Localised impacts</p>	<p>Meet NAQs targets for all pollutants</p> <p>Traffic Count Surveys</p> <p>Programme of Air Quality monitoring</p> <p>Modelling of before and after emissions</p>
<p>To contribute to improving the overall safety, security and health in the West Midlands, through reducing accidents and improving security on the public transport network.</p>	<p>Accident reductions</p> <p>Identify security benefits</p> <p>Health impacts</p>	<p>Passenger perception surveys of safety</p> <p>Road Traffic Reduction Act Targets</p> <p>Percentage of people within 400m of route</p>