



Cambridge South East Transport Phase 2

Outline Business Case - Financial Case

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Contents

1	Introduction	1
1.1	Approach to the Development of the Financial Case	1
2	Scheme Costs	3
2.1	Base Costs	3
2.2	Risk Adjusted Costs	4
2.3	Spend Profile	5
2.4	Vehicle Capital Costs	5
2.5	Maintenance and Renewals Costs	5
2.6	Operating Costs	6
2.6.1	Vehicle Operating Costs	6
2.6.2	Travel Hub Facility and Public Transport Route	6
3	Funding Arrangements	8
3.1	Funding Profile - Capital Costs	8
4	Accounting Implications	9
4.1	State Aid	9
5	Summary	10

Tables

Table 1.1:	Compliance with DfT requirements for the Financial Case at OBC Stage	1
Table 2.1:	Base Capital Costs – Infrastructure (exclusive of risk allowance)	4
Table 2.2:	Capital Costs – Infrastructure Adjusted for Risk	4
Table 2.3:	Annual Spend Profile – Preferred Option	5
Table 2.4:	Operating Costs – Travel Hub Facility and Public Transport Route	7
Table 3.1:	Funding Profile – Preferred Option (£)	8

1 Introduction

The Financial Case is one of the five cases that form the DfT's Transport Business Case process. The Financial Case outlines the affordability of the preferred option, its funding arrangements and technical accounting issues. The case also presents the financial profile of the preferred scheme option and an overview of how the scheme will be funded.

The other four cases which make up the Transport Business Case Process are:

- The **Strategic Case** which determines whether an investment is needed, either now or in the future. It demonstrates the case for change – that is, a clear rationale for making the investment and its strategic fit – how an investment will further the aims and objectives of the organisation. The Strategic Case is presented in document 403394-MMD-BCA-00-RP-BC-0247.
- The **Economic Case** which assesses options to identify all their impacts, and the resulting value for money, to fulfil Treasury's requirements for appraisal and demonstrating value for the taxpayers' money. The Economic Case is presented in document 403394-MMD-BCA-00-RP-BC-0292.
- The **Commercial Case** which provides evidence on the commercial viability of a proposal and the procurement strategy that is used to engage the market. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project. The Commercial Case is presented in document 403394-MMD-BCA-00-RP-BC-0231.
- The **Management Case** which assesses whether a proposal is deliverable. It tests the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance (e.g. a Gateway Review). The Management Case is presented in document 403394-MMD-BCA-00-RP-BC-0277.

The remainder of this document comprises the Financial Case for Phase 2 of the Cambridge South East Transport (CSET) project.

1.1 Approach to the Development of the Financial Case

The DfT's guidance document, 'The Transport Business Case: Financial Case', outlines the areas that should be covered as part of the Financial Case at the OBC stage. This has been used as a broad guide in developing the structure and content of this Financial Case. Table 1.1 shows where the relevant information on required content can be found in this document.

Table 1.1: Compliance with DfT requirements for the Financial Case at OBC Stage

Content	DfT Requirements	Section Number and Title(s)
Introduction	Outline the approach taken to assess affordability.	1.1 Approach to the Development of the Financial Case
Costs	Provide details of: <ul style="list-style-type: none"> • Expected whole life costs • When they will occur • Breakdown and profile of costs by those parties on whom they fall • Any risk allowance that maybe needed (in the event of things going wrong) 	2.1 Base Costs 2.2 Risk Adjusted Costs 2.3 Spend Profile 2.4 Vehicle Capital Costs 2.5 Maintenance and Renewals Costs 2.6 Operating Costs
Budget/Funding Cover	Provide analysis of the budget/funding cover for the project. Set out, if relevant,	3. Funding Arrangements

	details of other funding sources (e.g. third-party contributions, fees).	
Accounting Implications	Describe expected impact on organisation's balance sheet.	4. Accounting Implications

Source: DfT

2 Scheme Costs

Scheme costs for the preferred option have been developed based upon the designs set out in Appendix N of the OBC: Preferred Option Drawings, document reference 403394-MMD-BCA-XX-RP-BC-0360. The detailed breakdown of costs for the preferred option is included in Appendix K of the OBC: Project Costs Breakdown, document reference 403394-MMD-BCA-00-RP-BC-0372. Land cost estimates have been prepared separately and are included within overall scheme costs. The estimated scheme cost is considered proportionate and affordable to the scale of the issues identified in the Strategic Case and the predicted benefits of the scheme as assessed in the Economic Case. The comprehensive costs include preparation and design, project management and planning, construction, land acquisition, inflation and other costs.

The total base capital costs for the infrastructure needed to deliver the preferred option, exclusive of any risk allowance, amount to **£103,924,000**. A high-level breakdown of the costs is presented in Table 2.1. An additional amount of £25,981,000 has been estimated to cover risks.

The estimated total capital infrastructure cost of the scheme, inclusive of risk, is **£129,905,000** as shown in Table 2.2. An additional sum of £2,400,000 has been spent between 2015 and 2019 on developing the scheme. These historic costs together with future risk-adjusted capital costs total **£132,305,000** and constitute the funding ask.

2.1 Base Costs

Base capital costs for the infrastructure needed to deliver the preferred option have been produced by Mott MacDonald cost estimators. The base costs exclude any allowance for risk.

The base cost estimates include the following:

- **Construction costs:** These consist of:
 - Main works contract (including structures, such as bridges, the Travel Hub facility, road works, general works, site clearance and earthworks and contractors' preliminaries); and
 - Ancillary work contracts (including maintenance compounds, lighting, landscaping and environmental mitigation).
- **Design costs:** This accounts for design fees, on-site supervision and testing of scheme elements prior to scheme opening.
- **Project Management costs:** This consists of all project management, public consultation, public inquiry, and the costs of obtaining statutory orders.
- **Environmental Mitigation:** Allowance for costs and fees to provide mitigation and commuted payments for future maintenance of environmental mitigation measures.
- **Statutory Undertakings:** Costs to divert or protect existing Statutory Undertakers' equipment affected by the works.
- **Land costs:** This includes the acquisition and legal transaction costs for all the required private and commercial land, and additionally accounts for property management costs and compensation.
- **Inflation costs:** This accounts for inflation above the base cost estimates in accordance with RPI.

Key assumptions made to derive robust estimated scheme costs included:

- The project began in 2015 and is expected to be completed by 2025;
- An opening year of 2025;

- The scheme will use guided system technology;
- Scheme costs are prepared in Q2 2020 prices; and
- An inflation rate of 3% per annum has been applied to Q2 2020 costs, based on forecast RPI.

Table 2.1 shows the breakdown of base capital infrastructure costs for the preferred scheme option, exclusive of any risk allowance.

Table 2.1: Base Capital Costs – Infrastructure (exclusive of risk allowance)

Cost Item	Cost (£)
Construction	54,941,000
Design	7,637,000
Project management	10,037,000
Environmental mitigation	2,349,000
Statutory undertakings	10,034,000
Land costs	9,160,000
Inflation	9,766,000
TOTAL	103,924,000

Source: Mott MacDonald

2.2 Risk Adjusted Costs

As the scheme design for the preferred option is at an early stage of progression, there is still significant development work required to be undertaken to progress the design to the point where the scheme can be constructed. It is therefore important to recognise that there is uncertainty in the design and assumptions upon which the costs are based and to reflect this an uplift has been applied to the base costs.

At this current stage of development, the Outline Business Case (OBC), a confidence level of P80¹ risk has been applied to calculate the overall project cost estimate (this is the base costs plus the risk value). The value that has been applied is 25%. A cost range has also been calculated based on P50 (19%) and P90 (29%) contingency allowances. Table 2.2 provides a breakdown of the risk-adjusted capital infrastructure costs for the preferred scheme option.

Table 2.2: Capital Costs – Infrastructure Adjusted for Risk

Cost Item	Cost (£)
Construction	68,676,000
Design	9,546,000
Project management	12,547,000
Environmental mitigation	2,936,000
Statutory undertakings	12,543,000
Land costs	11,450,000
Inflation	12,207,000
TOTAL	129,905,000
Range	123,670,000 to 134,062,000

Source: Mott MacDonald

¹ A confidence level of 80% (P80) means that in 80% of instances, the result can be considered reliable

The capital infrastructure cost of the preferred option after adjustment for risk is therefore £129,905,000 (P80), with a range of £123,670,000 (P50) to £134,062,000 (P90).

At the next stage of development, the Full Business Case (FBC), the designs and details of the preferred scheme option will be at a higher level of maturity, with unspecified uncertainties reduced to a minimum. All known areas of uncertainty are documented on the project Risk Register. As the CSET Phase 2 scheme is developed the Risk Register will continue to be used to identify, quantify and value the known uncertainties of the project and maintained as a live document. It will identify who owns each item, provide an assessment of the likelihood of occurrence and an estimate of the impact of occurrence on project outcomes (cost and duration).

Based on the Risk Register, a Quantitative Cost Risk Assessment (QCRA) process will be followed. This will use the latest project cost estimates, the Risk Register data and Monte Carlo simulation software to determine the contingency allowance to be included in the risk-adjusted project cost estimate at FBC stage.

2.3 Spend Profile

The total risk adjusted capital infrastructure cost of the preferred scheme option from 2020 is £129,905,000. However, an additional sum of £2,400,000 has been spent between 2015 and 2019 on developing the scheme. These historic costs together with future risk-adjusted capital costs total £132,305,000 and constitute the funding ask. Table 2.3 below shows the actual (2015-2019) and expected (2020-2025) annual spend profile for the project.

Table 2.3: Annual Spend Profile – Preferred Option

Costs (£)	2015 to 2019 ²	2020	2021	2022	2023	2024	2025
Annual costs	2,400,000	1,885,000	1,941,000	14,871,000	54,574,000	46,666,000	9,968,000
Cumulative TOTAL	2,400,000	4,285,000	6,226,000	21,097,000	75,671,000	122,337,000	132,305,000

Source: Mott MacDonald

2.4 Vehicle Capital Costs

While there is a potential capital cost to be considered for the supply of new vehicles for the High Quality Public Transport (HQPT) services planned to operate on the CSET Phase 2 corridor, a final preferred operating model for the scheme is yet to be confirmed. The options available for the supply of vehicles are set out in the Commercial Case, with a final decision on a preferred option to be confirmed in the FBC (in line with DfT guidance).

At present it is not expected that the preferred option would involve the procurement of vehicles by GCP or its partner organisations. Accordingly, vehicle capital costs do not form part of the current funding ask.

2.5 Maintenance and Renewals Costs

TAG Unit A1.2 (Scheme Costs) states that traffic-related maintenance and renewal costs should also be considered in addition to capital investment costs. The potential financial costs of ongoing maintenance include:

- General inspection of infrastructure and regular maintenance / replacement;

² These costs account for developing the scheme from its inception up to OBC submission

- Replacement of asphalt to footways, maintenance tracks and new highway works;
- General street cleaning;
- Landscaping maintenance;
- Gully cleaning;
- Replacement of street lighting fittings;
- Maintenance of public transport stop infrastructure and fittings;
- Maintenance of traffic signals; and
- Maintenance of facilities building at the Travel Hub.

The assessment of maintenance costs assumes a period of 60 years from the opening year of 2025 to 2084 inclusive, with a total budget of £33,440,000 at 2025 (opening year) prices, undiscounted. This equates to annual maintenance costs of £557,333. There are peaks and troughs within the maintenance cost profile as some of the works will be carried out as part of annual highway maintenance, while others such as planing and resurfacing the carriageway are carried out periodically as and when the top surface reaches the end of its design life.

For annual maintenance works it is assumed that payments will be in equal instalments across a 25-year period and will commence one year after the scheme opens, which is assumed to be 2025. However, at this time specific maintenance costs are subject to negotiation with potential providers and are therefore commercially sensitive, so are not published in this OBC. They will be known with more clarity at FBC stage and published at that time.

2.6 Operating Costs

Operating costs to be considered include:

- Vehicle operating costs; and
- The operating costs of the Travel Hub facility and the public transport route itself.

2.6.1 Vehicle Operating Costs

The potential operating models for the HQPT services planned to operate on the CSET Phase 2 corridor are set out in the Commercial Case, with a final decision on a preferred option to be confirmed in the FBC (in line with DfT guidance).

At present it is assumed that a commercial level of HQPT service will be provided that will enable vehicle operating costs to be fully covered from fares paid by service users. This assumption is supported by the well-established commercial operation of public transport services on the existing Cambridgeshire Guided Busway since 2011. Accordingly, vehicle operating costs do not form part of the current funding ask.

2.6.2 Travel Hub Facility and Public Transport Route

As with maintenance costs, operating costs for both the Travel Hub facility and the public transport route are subject to negotiation with potential providers and are therefore commercially sensitive, so are not published in this OBC. They will be known with more clarity at FBC stage and published at that time, although again they do not form part of the funding ask.

A summary of the likely key operating cost items, based on Mott MacDonald cost estimators' past experience, are noted along with assumptions and estimated quantities in Table 2.4.

Table 2.4: Operating Costs – Travel Hub Facility and Public Transport Route

Operating Cost Item	Assumptions	Quantity	Unit
Travel Hub Facility			
General cleaning for the facilities building	Daily and 2 people for 2 hours	1,460	hr
Utilities cost for the facilities building	Yearly	224	m ²
Monitor CCTV cameras	Allow 1-person hour per day to monitor the cameras (overtime paid to cover additional requirement)	365	hr
Power consumption - Lighting at Travel Hub	129nr Luma 3 lights x 254w = 32,766w per hour = 32.77kW x 4,380 hours per year = 143,533kW (as advised by DW Windsor)	143,533	kW
Power Consumption - CCTV cameras	Allow 25% of the above lighting quantity	35,883	kW
Public Transport Route			
Power Consumption - Lighting at Stops	12nr Luma 1 lights x 254w = 3,048w per hour = 3.05kW x 4,380 hours year = 13,359kW (as advised by DW Windsor)	13,359	kW
Power Consumption - CCTV cameras	Allow 25% of the above lighting quantity	3,340	kW

Source: Mott MacDonald

3 Funding Arrangements

Funding for the CSET Phase 2 project is intended to be sourced primarily through the Greater Cambridge City Deal.

The City Deal Grant is a funding framework for central government and local partners to agree investment programmes, centred on the promotion of local economic growth and development. City Deal funding is being released by central government in tranches. The first tranche of funding for the Greater Cambridge City Deal awarded to GCP is worth £100 million (£20 million per year). A further £200m will be approved subject to gateway review and released from April 2020 onwards, and a final £200m will be released from April 2025 onwards.

To help meet the funding requirements and to address the impacts and transport requirements of future development within the CSET Phase 2 corridor, GCP will seek future opportunities to recover an appropriate proportion of the scheme cost from local developer contributions, secured through the planning process. However, no immediate opportunities to secure developer contributions to the scheme have been identified and so it is currently assumed that all funding will be drawn down from the City Deal funding.

3.1 Funding Profile - Capital Costs

At this stage no developer contributions have been secured so the City Deal is the sole funding source. Table 3.1 shows the funding profile by funding source from scheme inception in 2015 through to completion in 2025 and includes historic costs expended prior to the publication of this document, as well as the risk adjusted costs for future capital infrastructure spend.

Table 3.1: Funding Profile – Preferred Option (£)

Funding source	2015 to 2019	2020	2021	2022	2023	2024	2025	Total
City Deal	2,400,000	1,885,000	1,941,000	14,871,000	54,574,000	46,666,000	9,968,000	132,305,000
TOTAL	2,400,000	1,885,000	1,941,000	14,871,000	54,574,000	46,666,000	9,968,000	132,305,000

Source: GCP

4 Accounting Implications

The total risk adjusted capital infrastructure cost for the CSET Phase 2 project from 2020 through to completion in 2025 amounts to **£129,905,000**. This amount together with £2,400,000 spent on scheme development prior to 2020 totals a funding ask of **£132,305,000** and is deemed affordable based on successfully securing funding from the Greater Cambridge City Deal and potentially through the GCP Future Investment Strategy³, which is currently being developed.

If costs increase or funding from the identified sources is not secured, then the GCP as scheme promoters will explore other options through the GCP Future Investment Strategy to underwrite these costs. This may involve funding directly or by sourcing additional third-party funding. In any event, as the scheme proceeds, value engineering exercises will be undertaken to review the costs and reduce these where possible. Should a financial shortfall be identified then a more robust value engineering process may need to revisit the scheme in order to reduce costs, whilst minimising any reduction in the ability of the scheme to achieve its objectives and realise intended benefits.

The proposed scheme will also incur an increase in revenue costs in order to maintain the new assets. Arrangements for meeting these costs are being explored as part of the scheme's Commercial Case, including consideration of the alternative operating and maintenance options. The preferred option will be finalised at the next phase of scheme development and reported in the FBC, with any financial implications reflected within the Financial Case.

Options to fund any revenue cost shortfalls required to operate the new system will be explored and reported in the FBC by the GCP as scheme promoters, although it is anticipated that the operating model for the scheme will not result in a need for any revenue costs to be funded directly by the GCP.

4.1 State Aid

The GCP as scheme promoters will be using any funding it receives in furtherance of its statutory functions to provide public infrastructure which will not be commercially exploited. In addition, the CSET Phase 2 infrastructure is unlikely to specifically benefit any single organisation other than that it is likely to serve multiple existing and future employment and housing sites. Therefore, it is not anticipated that the CSET Phase 2 project has any State Aid implications. However, a full State Aid check will be carried out as part of the FBC.

³ <https://www.greatercambridge.org.uk/futureinvestmentstrategy>

5 Summary

- The Financial Case outlines the affordability of the CSET Phase 2 preferred option, its funding arrangements and technical accounting issues. The case has presented the financial profile of the preferred scheme option and an overview of how the scheme will be funded.
- Scheme costs for the preferred option have been developed based upon the designs set out in the Options Appraisal Report (OAR) and Strategic Case. The estimated scheme cost is considered proportionate and affordable to the scale of the issues identified in the Strategic Case and the predicted benefits of the scheme as assessed in the Economic Case.
- The estimated base cost of the scheme is £103,924,000 plus an additional £25,981,000 to cover risks, giving a total risk adjusted capital infrastructure cost of £129,905,000 from 2020 through to completion in 2025.
- Historic costs incurred between 2015 and 2019 in scheme development amount to £2,400,000. These costs together with future risk-adjusted capital costs total £132,305,000, which is the funding ask.
- Funding for the CSET Phase 2 project is intended to be sourced primarily through the Greater Cambridge City Deal, with GCP then seeking future opportunities to recover an appropriate proportion of the scheme cost from local developer contributions, secured through the planning process. As it stands, no immediate opportunities to secure developer contributions to the scheme have been identified.

