MOTT MACDONALD

Cambourne to Cambridge Better Public Transport Project

Outline Business Case
Commercial Case

17 January 2020

392438-MMD-BCA-XX-RP-BC-0030

Mott MacDonald
22 Station Road
Cambridge CB1 2JD
United Kingdom

T +44 (0)1223 463500
F +44 (0)1223 461007
mottmac.com

Cambourne to Cambridge Better Public Transport Project

Outline Business Case
Commercial Case

17 January 2020

392438-MMD-BCA-XX-RP-BC-0030

Document reference: 392438-MMD-BCA-XX-RP-BC-0030

Information class: Standard

Contents

Glossary of terms

Analysis of Monetised Cost and Benefits (AMCB) table: Summarises the monetised impacts of a scheme that are included in the scheme's Net Present Value and Benefit-Cost Ratio.

Appraisal Summary Table (AST): Provides a complete summary of the scheme impacts, including the scheme's monetised impacts, and non-monetised impacts (both quantitative and qualitative).

Benefit Cost Ratio (BCR): Benefit Cost Ratio, is an indicator of the overall value for money of a project or proposal.

Cambridgeshire Autonomous Metro (CAM): CAM is the proposed metro style system for Greater Cambridge.

Committed Schemes: Where a scheme has been deemed likely to proceed and is therefore included within the option appraisals.

Conservation Area: An area designated under Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as being of special architectural or historic interest and with a character or appearance which is desirable to preserve or enhance.

Context: The setting of a site or area, including factors such as traffic, activities and land uses as well as landscape and built form.

Countryside: The rural environment and its associated communities.

Cumulative Impact: The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.

Early Assessment Sifting Tool (EAST): Early Assessment Sifting Tool is used by DfT, to quickly summarise and present evidence on options. INSET is an enhancement of EAST and follows the same broad principles and approach.

Effect: The consequence of the scale of any change to the baseline environment, i.e. impact, on the environmental receptor, taking account of its particular value or sensitivity.

Element: A component part of the landscape (for example, roads, hedges, woods).

Enhancement: Landscape improvement through restoration, reconstruction or creation.

Environment: Our physical surroundings including air, water and land.

Environmental Impact Assessment (EIA): A formal, structured process of evaluating the likely environmental impacts of a proposed scheme, considering inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.

Full Business Case (FBC): The culmination of the final phase is the Full Business Case. An investment committee will consider the Full Business Case then make a recommendation to ministers. Ministers will decide whether a proposal should proceed to implementation.

Form: The layout (structure and urban grain), density, scale (height and massing), appearance (materials and details) and landscape of development.

Gross Domestic Product (GDP): A measure of the total value of goods produced and services provided in an area.

Gross Value Added (GVA): A measure of the economic productivity of an area.

High Quality Public Transport (HQPT): High Quality Public Transport, is a transport system that includes a range of features such as high levels of segregation, junction priority, high quality infrastructure (shelters, CCTV, real time, lighting, seating, help points etc), and high quality vehicles to name but a few.

Heritage Asset: A building, monument, site, place, area or landscape of historic value.

Investment Sifting and Evaluation Tool (INSET): INSET is Mott MacDonald's evaluation tool used in the optioneering process. INSET is an enhancement and expansion of EAST.

Landform: Combination of slope and elevation that produce the shape and form of the land.

Landscape: The character and appearance of land, including its shape, form, ecology, natural features, colours and elements and the way these components combine. Landscape character can be expressed through landscape appraisal, and maps or plans. In towns 'townscape' describes the same concept.

Landscape Character: The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape.

Landscape Feature: A prominent eye-catching element, for example, wooded hilltop or church spire.

Landscape Quality: Based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place.

Landscape Sensitivity: The extent to which a landscape can accept change of a particular type and scale without unacceptable adverse effects on its character.

Land Use: The primary use of the land, including both rural and urban activities.

Local Liaison Forum (LLF): The LFF provide a link between a project team and the local community.

Multi Criteria Assessment Framework (MCAF): Multi-Criteria Assessment Frameworks are used in the optioneering assessment process and allow options to be assessed against a range of criteria linked to the scheme objectives as well as wider policy and strategy objectives.

Methodology: The specific approach and techniques used for a given study.

Mitigation: Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.

Modal Shift: A shift from one transport type to another e.g. road travel to rail travel.

Movement: People and vehicles going to and passing through buildings, places and spaces. The movement network can be shown on plans, by space syntax analysis, by highway designations, by figure and ground diagrams, through data on origins and destinations or pedestrian flows, by desire lines, by details of public transport services, by walk bands or by details of cycle routes.

Option Assessment Report (OAR): The Options Assessment Report sets out the process undertaken to identify and assesses options, leading to the selection of the preferred option.

Outline Business Case (OBC): Is the second phase of the process which reconfirms the conclusions of set out in the Strategic Outline Business Case (SOBC). The OBC focuses on the detailed assessment of the options to find the best solution.

Public Accounts (PA) table: Records the investment and operating costs incurred by a public sector in delivering the scheme.

Receptor: Something that makes up the environmental baseline e.g. humans or other biological species, elements of the physical environment including water, air, soil, assets that make up the cultural heritage of an area.

SATURN: Simulation and Assignment of Traffic in Urban Road Networks, is a computer program that calculates route choices between origin and destination.

Strategic Outline Business Case (SOBC): This sets out the need for intervention (the case for change) and how this will meet strategic aims and objectives (the strategic fit). It provides suggested or preferred ways forward and presents the evidence for a decision.

Strategic View: The line of sight from a particular point to an important landmark or skyline.

Sustainability: The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.

Transparent Economic Assessment Model (TEAM): TEAM is a tool designed to calculate the economic impacts and benefits of proposed infrastructure interventions and policy measures.

Topography: A description or representation of artificial or natural features on or off the ground.

Townscape: Physical and social characteristics of the built and unbuilt urban environment and the way in which those characteristics are perceived. The physical characteristics are expressed by the development form of buildings, structures and space, whilst the social characteristics are determined by how the physical characteristics are used and managed.

Tranquillity: A state of calm or quiet.

Transport Appraisal Guidance (TAG): The DfT's Transport Appraisal Guidance (often referred to as TAG)

Transport Economic Efficiency (TEE) table: Summarises the monetised impacts against different user groups.

Transport User Benefit Appraisal (TUBA): TUBA is an economic appraisal computer programme developed for the Department for Transport (DfT) for appraising multi modal transport studies.

Visual Impact: Change in the appearance of the landscape as a result of development. This can be positive (i.e. beneficial or an improvement) or negative (i.e. adverse or a detraction).

Wider Economic Impacts (WEI): improvements in economic benefits that are acknowledged, but which are not typically captured in traditional cost-benefit analysis.

1 Introduction

This is the Commercial Case for the Camborne to Cambridge Better Public Transport project (C2C) and forms one of the 5 cases for the Outline Business Case.

The purpose of the Commercial Case is to provide evidence on the commercial viability of the proposal and the procurement strategy that will be used to engage the market. The Commercial Case is prepared in line with DfT Guidance.

1.1.1 Approach

This section sets out the emerging Commercial Case for the C2C project infrastructure[1] and provides evidence on the commercial viability of the proposal and the procurement strategy that will be used to engage the market.

Here, risk allocation and transfer, contract timescales and implementation timescales, capability and skills of the team delivering the project and the resource implications of the approach are all considered.

The DfT's guidance document, '*The Transport Business Case: Commercial Case*'[2], outlines the areas that should be covered as part of the Commercial Case. Table 1 shows where the relevant information, in accordance with DfT requirements can be found in the subsequent sections that make up the Commercial Case.

As with all construction projects, there is a need for time, cost and quality issues to be managed and their inevitable tensions balanced. The process of contract selection and formulation will help to ensure the scope and project specific risks are controlled through procurement.

Table 1: Compliance with DfT requirements for the Commercial Case

Content	DfT Requirements	OBC section
Introduction	Outline the approach taken to assess commercial viability	1 - Introduction
Output based specification	Summarise the requirement in terms of outcomes and outputs	2 – Output based specification
Procurement strategy	Detail procurement/purchasing options including how they will secure the economic, social and environmental factors outlined in the economic case	3.1 – Procurement strategy
Sourcing options	Explain the options for sources of provision of services to meet the business need e.g. partnerships, framework, existing supplier arrangements, with rationale for selecting preferred sourcing option	3.2 – Procurement options 3.3 – Services 3.4 – Procurement method comparisons 3.5 - Contractor framework comparisons 3.6 – Consultancy framework contracts
Payment mechanisms	Set out the proposed payment mechanisms that will be negotiated with the providers e.g. linked to performance and availability, providing incentives for alternative revenue streams. (See the Office for Government Commerce's Achieving	4 – Contract and payment mechanisms

[1] The procurement strategy for the vehicles that will operate the system is being progressed separately and will be reported as part of the final OBC.

[2] DfT – The Transport Business Cases (January 2013) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

Content	DfT Requirements	OBC section
	Excellence briefing for advice on payment mechanisms for construction projects.)	
Pricing framework and charging mechanisms	To include incentives, deductions and performance targets.	5 – Pricing framework and charging mechanisms
Risk allocation and transfer	Present an assessment of how the types of risk might be apportioned or shared, with risks allocated to the party best placed to manage them subject to achieving value for money	6 – Risk allocation and transfer
Contract length	Set out scenarios for contract length (with rationale) and proposed key contractual clauses	7 – Contract length
Human resource issues	Personnel/people management/trade union implications, where applicable, including TUPE regulations	8.2 – Human resources
Contract management	Provide a high-level view of implementation timescales. Detail additional support for in service management during roll-out/ closure. Set out arrangements for managing contract through project / service delivery	8 – Contract management

Source: DfT - The Transport Business Cases (January 2013)

2 Output Based Specification

2.1 C2C objectives and outcomes

The C2C project objectives include the following objectives and outcomes that are relevant to defining the operational requirements for the High Quality Public Transport (HQPT) system to be delivered by the project:

- Provide additional capacity during the peak periods to meet forecasted growth in demand along the A428/A1303.
- Deliver HQPT, offering improved waiting and in-vehicle environments that are comparable to Cambridge's existing Guided Busway.
- Improve the attractiveness of sustainable modes of travel as an alternative to using cars, leading to an increase in their mode share.

The Transport Strategy for Cambridge and South Cambridgeshire[3] (2014) defines a HQPT service as “one that provides, high quality, low floor/easy access buses, air conditioning, prepaid / electronic ticketing, Real Time Public Information (RTPI) and branding to encourage patronage.”

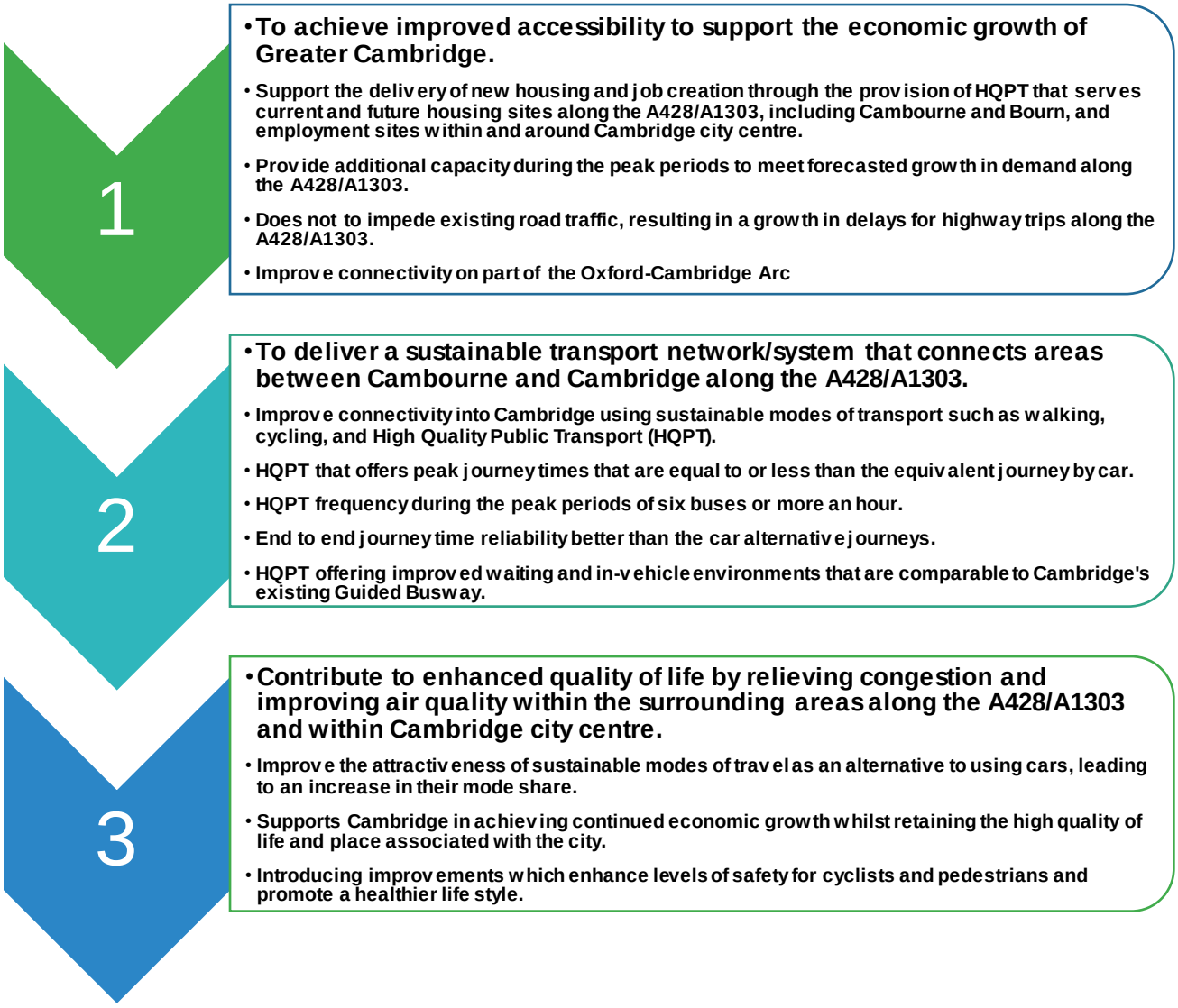
The high-level outputs for the C2C project include:

- A new segregated High Quality Public Transport System
- A new Park & Ride site
- New segregated cycling and walking infrastructure

The C2C project will provide improved public transport links, connecting people to places of employment, study and key services and help existing and new communities along the A428/A1303 grow sustainably in the coming years. By providing new travel choices and alternatives to the car, the C2C project is intended to manage growing congestion on the A428/A1303, ensuring people have good access to employment opportunities thereby helping to secure Cambridge’s continued economic success. Objectives and sub-objectives of the C2C project are shown in Figure 1.

[3] https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/transport-plans-and-policies/cambridge-city-and-south-cambs-transport-strategy/

Figure 1: C2C project – scheme objectives



In order to deliver the scheme outcomes, a procurement strategy and methodology is required that delivers the following:

- **Cost certainty** - Achieve cost certainty, or certainty that C2C can be delivered within the funding constraints.
- **Minimise costs** - Minimise preparation costs in regard to scheme design and minimise construction delivery costs.
- **Programme** - Achieve an efficient delivery programme that ensures an opening year for the scheme of 2024
- **Quality** - Achieve appropriate quality of design and end product.
- **Continuity of project knowledge** - Maintain project knowledge to support scheme design and successful rebuttal of any project challenge. The knowledge of the scheme and associated issues and constraints, generated through the development of the OBC, is seen as an asset and will help enhance quality of delivery and achievement of programme.

- **Risk** - Obtain contactor input to risk management and appraisals, including mitigation measures, to capitalise at an early stage on opportunities to reduce construction risk and improve outturn certainty thereby reducing risks to a level that is as low as reasonably practicable.
- **Deliverability** - Engagement with contractors and stakeholders, throughout planning to scheme delivery, to support development of robust buildable and deliverable proposals.
- **Quality** - Ensure Greater Cambridge Partnership (GCP) receives a quality finished product for such a significant intervention in the city. Quality encompasses a range of factors, including:
  - System performance and reliability, which underpin the economic case
  - Construction quality
  - Safety and compliance with statutory obligations, including environmental obligations

These are the criteria by which procurement strategies and methods have been assessed and the subsequent sections detail the results of this assessment.

2.2 CAM Phase 1 objectives and outcomes

As the C2C project forms phase 1 of the proposed Cambridgeshire Autonomous Metro (CAM) system, the Commercial Case for C2C also requires to meet the following strategic objectives and outcomes:

- Achieve cost certainty, or certainty that CAM Phase 1 can be delivered within the funding constraints;
- Minimise preparation costs in regard to scheme design;
- Be delivered within construction design standards that are defined within the contract;
- Obtain contractor input to risk management and appraisals, including mitigation measures, to capitalise at an early stage on opportunities to reduce construction risk and improve outturn certainty thereby reducing risks to a level that is as low as reasonably practicable; and,
- Engage with contractors and stakeholders throughout planning to scheme delivery.

3 Procurement Method and Sourcing Options

3.1 Procurement strategy

This section provides insight into the procurement options for C2C. Procurement is an integral part of the project management process. The procurement strategy has been designed to ensure:

- Value for money - GCP is under a duty to secure value for money in all of its transactions.
- Compliance with legislation - a wide variety of UK and European Union legislation and regulations apply.
- Avoidance of fraud and corruption - procurement must be visible and tightly controlled to limit potential fraud and avoid any suggestion of corruption.
- The promoting / procuring authorities vision and ambitions: procurement contributes directly to the delivery of GCP's vision and long-term ambitions.
- Fulfil the commercial cases scheme objectives.
- Flexibility - allow for future schemes, development, innovation and new technology, ensuring GCP is not locked into long-term agreements.

The Public Contracts Directive 2014 issued by the European Union was implemented in the UK through the Public Contracts Regulations 2015. Cambridgeshire County Council (CCC) as the public authority responsible for procuring the C2C project on behalf of the GCP, are required to comply with these Regulations.

The Regulations describe a number of options for procurement processes for contracts and the criteria which determine which of these options can be applied. The options given are:

- **Open procedure** – bids for the contract are received from any applicant who fulfils certain minimum criteria. This procedure requires a fully developed scheme design and proposal and may result in the receipt of a large number of bids. This procedure allows an unlimited number of interested parties to tender against defined parameters. There are no restrictions (e.g. pre-qualification) on the parties who are permitted to tender, meaning that some parties may not be suitable to carry out the work. This procedure is straightforward and transparent but can attract a large number of potential bidders (which will require a greater degree of assessment and resource requirements). It also takes considerable time and resource, as well as limiting time for Early Contractor Involvement (ECI), and buildability input by the contractor.

- **Restricted procedure** – applicants are required to submit a pre-qualification application from which a short list of the most suitable applicants is drawn up. Bids are invited only from those applicants on the short list. This is a two-stage procedure. The first stage allows the contracting authority to set the minimum criteria relating to technical, economic and financial capabilities that the potential bidders have to satisfy.

- **Competitive dialogue procedure** - this may be used where the needs of the contract cannot be met with readily available solutions and the Open or Restricted procedures are not considered suitable. In this case applicants are short listed but the solution for the scheme is developed with the applicants, at which point a reduced number of applicants are asked to submit a final tender. This procedure is appropriate for complex contracts where contracting authorities are not objectively able to define the technical means capable of satisfying their needs or objectives; and/or are not objectively able to specify the legal and/or financial make-up of a project. This is a

multi-stage procedure. The first stage is a pre-qualification to select the potential bidders to participate in the dialogue. In the second stage the contracting authority enters a dialogue with the potential bidders to identify and define the means best suited to satisfying their needs. Any aspect of the contract may be discussed, including technical requirements for the works to be delivered and the commercial / contractual arrangements to be used. The dialogue may be conducted in successive phases with the remaining bidders being invited to tender. By the end of the dialogue phase the contracting authority's requirements will have been determined such that the scheme can be tendered. In the final stage, the remaining bidders from the dialogue phase are invited to tender for the scheme.

- **Competitive procedure with negotiation** - This relatively new procedure is intended to be used where minimum requirements are able to be specified but negotiations with bidders may be needed to improve the initial tenders. The grounds for using this procedure are as follows:
  - Where needs cannot be met without adaptation of readily available solutions;
  - Where the contract includes design or innovative solutions;
  - Where the requirement is complex in nature, in its legal and financial makeup or because of its risks;
  - Where the technical specifications cannot be established with sufficient precision; or,
  - In the case of unacceptable/irregular tenders.

  Within this procedure, bidders initially submit tenders based on the information issued by the contracting authority. The contracting authority is then able to review the tenders it has received and negotiate with the bidders, following which the tenders will be resubmitted. This procedure may therefore be useful where the requirements are well developed initially, and full tender documents can be produced but it is felt that there may be advantage in retaining the ability to hold negotiations if there are certain aspects which bidders raise.

3.1.1 Preferred procurement procedure

This scheme will likely be procured using the OJEU Restricted Procedure due to the fact that it will be possible to publish a well-defined tender package for bidders to price against although variant tenders would be accepted in order to allow bidders to propose alternative solutions and a clear evaluation methodology shall be in place to allow for this. Bidders will be evaluated against both cost and quality. The Restricted Procedure also has defined timescales for each stage which will allow GCP to ensure that the tenders can be received by the dates required by the overall project programme. A Direct Award is unlikely to be justified as the procurement should be subject to competition to ensure best value for money and an Open Tender Procedure has potential to attract multiple submissions with a protracted length of time required to evaluate tenders. The full tender pack shall be issued concurrently with the selection questionnaire.

Whilst the Restricted Procedure is the likely procurement procedure, this will not be confirmed until Full Business Case (FBC) stage following further consideration of the procurement procedures available.

The implications of Brexit are not currently known but it is likely that after Brexit there should be no immediate change to public procurement rules in the UK.

3.2 Procurement strategy - options

The desired balance of risk is a key influence in the choice of procurement. The key criteria for risk are interdependent and often in tension:

- Time (speed or certainty of completion date);
- Cost (price level or cost certainty); and,
- Quality (functionality and performance).

Time and cost will directly influence the procurement strategy and quality will be partly addressed through the tendering process. A pre-qualification process, based on the assessment of references and evidence of competence, will ensure that appropriate companies are selected that demonstrate the necessary skills and experience to undertake the work.

The following procurement routes have been considered:

3.2.1 Option 1: Traditional Contract

For this option, a designer would be appointed to complete a full detailed design. A tender would then be undertaken based on the detailed design. The appointed contractor would be responsible for construction only. A successful traditional contract requires certainty of buildable design information and that adequate time is made available to prepare the detailed design and provide the contractor with sufficient construction information. Consequently, for this method to be truly effective, full documentation needs to be in place before the contractor can be invited to tender.

The traditional arrangement allows close control of the design process by the client. However, as the construction contract is awarded on the basis of the completed design, there is limited opportunity for the successful contractor to influence it into the design to reduce risks and cost. Although contractor input can be brought in during the design stage, it may not be relevant as the same contractor may not undertake construction. This form of contract can also limit the contractor's ability to use innovative construction methods which could result in in savings and increased performance of the finished scheme. Separate contracts between the client and the parties providing the design and construction results in risks from any issues arising from the design resting, at least initially, with the client. The following summarises the key points assessed for this option:

Table 2: Traditional Contract advantages and disadvantages

Option	Advantages	Disadvantages
Traditional	• Scope, anticipated costs and risk profile are well established prior to tender leading to more consistent tender returns. • No delay to scheme progression. • Allows for competitive tender. • Comparable in programme terms with design and build. • High client control over specification and quality. • GCP has more control over the Contractor's work sequences and traffic management. • GCP have complete control over all design decisions. • Familiarity among contractors and consultants - the roles and responsibilities are well understood. • The client retains responsibility for and control of the design team. • There is direct reporting by the design team to the client to ensure that quality control is maintained.	• Design risk remains with GCP. • Design progressed without input from contractor that will deliver construction stage, buildability and phasing issued may not be assessed appropriately leading to redesign, cost increase and delay. • Requires strong technical expertise not available within GCP to deliver value for money. • There is limited resource within GCP to manage a detailed design. • There are significant design interfaces to be managed, between the various work elements. • GCP exposed to delay risks associated with design interfaces. • To be effective, it requires the scheme to be more or less fully designed before tenders are sought - this may result in

	• There is certainty of price (if the work is fully designed in advance).	an extended pre-tender period. • The fragmented design and construction process and responsibility can lead to disputes, for example in respect of whether construction defects are really design defects or whether they are construction defects. • There is the potential for over-design and/or over-engineering. • The contractor is not involved in the design process and therefore is not required to 'buy in' to the design. • The client retains responsibility for the design team performance. • A contractor may price the work to win the job rather than providing a price that properly reflects the work to be carried out. This can encourage a claims culture if the submitted price was too low because of market forces.

Source: Mott MacDonald

3.2.2 Option 2: Design and Build

Client submits for tender the design developed during the statutory processes and passes it to the contractor to tender the detailed design and construction. A single stage design and build contract places the design and construction in one package. The contract is awarded on the basis of a cost for the design and construction of the works, based on a design. This arrangement offers an incentive for the contractor to ensure that the design is buildable and can facilitate a quicker start on construction as work can commence before the design is complete, so long as it is sufficiently advanced. However, as the contractor must estimate the cost at tender stage based on preliminary design information, there is a risk that the actual cost for construction is different with the potential for contractual claims and disputes.

This method of procurement involves the contractor being responsible for the design as well as construction. It can be suitable for cost certainty and fast track construction. This approach is not suitable where the client brief is developing or for very complex projects. The main contractor takes responsibility for both design and construction and will use either in-house designers or employ consultants to carry out the design. The main contractor has a direct influence over the design process and as such takes on the associated risks. To ensure that the client obtains what they are seeking in respect of a finished project it is essential that the client specifies exactly what is required and checks that this is matched by what the contractor offers to provide.

Therefore, although it is not necessary for full documentation (including the design) to be in place before the contractor can be invited to tender, for carrying out the work it is important that the client's brief and requirements are clearly set out. The design and build procurement approach is popular as the liability for both the design and the build is with the contractor and there is less chance of a liability of a defect falling between the gap of design and construction.

Table 3: Design and Build advantages and disadvantages

Table 3: Design and Build advantages and disadvantages

Option	Advantages	Disadvantages
Design and build	• Risks can be transferred to the contractor. • Less scope for variations in design compared with traditional tender. • Detailed design will be progressed with input to buildability and construction phasing. • No delay to scheme progression and option to retain OBC team to provide continuity of delivery. • Tender would be undertaken with more developed design information leading to more consistent tender returns. • Speed of delivery from concept to completed project. In its simplest form, design and build allows work on site to begin earlier (that is before the design is fully complete) than under traditional forms of contract. • Single point responsibility. The contractor is responsible for the design and the construction. Therefore, the client should have a single point of responsibility. • Acceptance of design. Because the contractor is responsible for the design and the construction, the contractor and the supply chain are involved in the production of the design to be used, and hence 'buy in' to that design. • Cost certainty, as the contractor can use their experience and expertise in providing a design that allows them to buy goods and services at the best buying margins. • Unless a contract states otherwise, the law implies a duty of fitness for purposes on a design and build contractor. This is more onerous than the normal duty of 'reasonable skill and care' imposed on a design consultant. • Complex design interface risks lie with Contractor, who is best able to manage them.	• Contractor risks are higher and may raise the price of the contract. This particularly relevant at early stages as the risk profile of the scheme is more uncertain. • Potential variation and challenge to existing design by appointed contractor. • The client has less control and influence over design matters. • Inflexibility. There is only limited scope for the client to make changes to their requirements once the client's requirements and contractor's proposals have been agreed. • Design quality. Because it is often perceived that the contractor is driven by price rather than by design standards, the design and build procurement route is not always the appropriate route to use where a high-quality design is required, unless a robust specification is included within the client's requirements. • The question of the quality achieved can be an issue because of the lack of control that the client has over the designer • The designer acts for the contractor not for the client.

	• Greater scope for private sector innovation.

Source: Mott MacDonald

3.2.3 Option 3: Early Contractor Involvement Two Stage Design and Build

Early Contractor Involvement (ECI) is a derivative of design and build but is used when engaging the contractor at an earlier time is seen to be advantageous to GCP. ECI is suited to projects that are not fully defined and where the contractor's knowledge and specialism is required to develop the design. This form of contract allows supplier engagement at an early stage of a project in order to draw in industry experience at the design and preparation stages. ECI contracts remain an option for major highways schemes where there is significant scope for input from the supply chain.

Their knowledge and abilities to influence project decisions will have maximum impact in terms of project timing, quality and cost. In adopting this approach careful consideration of the choice of contractual conditions is required to ensure that appropriate clauses are in place at key milestones in the development of the design. The timing of the appointment of the contractor in the project development is important; the design should be sufficiently developed to enable estimates and assumptions to be prepared and the client brief sufficiently developed. ECI is not suitable where the brief and scope of the works is fully defined or for repetitive or maintenance related work.

It is a collaborative form of contract, which brings the contractor into the project team early, with the team working together through the design and construction phases. This provides benefits of ensuring that the contractor can use his experience in the design phase to reduce overall project risk and ensure buildability. There are some significant differences compared with the single stage approach however, that provide a greater level of cost control and certainty.

Although the contract is awarded for design and construction, the process is divided into two parts, the first phase covering the detailed design and consents process, with construction as a second phase. There is a presumption that the scheme will be delivered as a single package but there is no guarantee that the contractor will move directly from detailed design to construction. This would be conditional on satisfactory performance and agreement of a construction target price. The contract will give ownership of the design to GCP so that in the event that a target price cannot be agreed, it may be used to re-tender the construction.

The ECI two stage approach also mitigates against cost and programme overruns as there is much greater certainty over the design and understanding of the risks at the point the construction target price is agreed (when the detailed design is sufficiently advanced). Developing this understanding can result in a longer contract period, but one that is likely to be more realistic as to cost and risk. A situation where construction commences before a design is sufficiently advanced would also be avoided.

The advantages are similar to those of design and build but can also provide the following:

Table 4: Early Contractor Involvement advantages and disadvantages

Option	Advantages	Disadvantages
Early Contractor Involvement	• Benefits in assisting clients where there are complex design and buildability issues to be overcome at the preparatory stage of the scheme. • Bringing the contractor's experience to the project at	• Less cost certainty at tender stage and variations and changes to the scope of work made by the client at a late stage can be expensive. • Increased cost in contract management resources to administer the contract process.

	key stages to influence the design. There is an increase in the scope for innovation as contractors can contribute to the development of the project. • High quality when all parties are able to contribute to the design at an early stage and health and safety risks are effectively managed. • Creation of an early design and development team, adopting a partnering approach, with increased transparency and therefore reduced risks and increased shared responsibility limiting the reasons for litigation. • Allows for early supplier engagement on a partnering basis. • Contractor is better placed to manage risk, having been involved from an early stage in the design process. • Allows for the incorporation of the supplier skills and knowledge within the early stages of design.	• Each party has different interests at the design stage which can lead to conflict or delay. • Although rates would be market tested, the target cost for the main construction works would be negotiated rather than competitively tendered.

Source: Mott MacDonald

3.2.4 Option 4: Design, Build, Operate and Maintain

In a Design, Build, Operate and Maintain (DBOM) arrangement, the private sector party is responsible for designing, building, operating and maintaining the project. Where major capital works are to be included in a contract with operational requirements, the suggested approach involves the authority procuring a consortium (building contractor and operator) that will take the lead and take on the risk in the design, construction and the operation of the new facility. Consortia bid for the contract, which is normally a long-term contract of 15 plus years and between them, deliver an optimum solution (in terms of design, construction and operation) balancing capital costs and revenue costs.

Table 5: Design, Build, Operate and Maintain advantages and disadvantages

Option	Advantages	Disadvantages
Design, Build, Operate and Maintain (DBOM)	• Suitable where private sector is better placed to manage maintenance (or O&M) risks. • Improved incentive to introduce innovation and encourages reduction in long term life cycle costs as some of the asset lifecycle risk is transferred to the contractor. • Contractor warrants design including 'fitness for purpose'. • There is a single point of accountability. • Offers a lower risk of cost overruns as the price is determined upfront for the period of the contract, including capital and O&M costs.	• Limited transfer of risk during construction as funding provided progressively. • Long-term nature of contracts prevents the flexibility required by GCP to allow for future innovation and new technology.

	• As a result of a greater emphasis on achieving an efficient whole of life costing, the DBOM model provides an improved scope for design and construction innovation. • The risk allocation regime and contractual structure associated with this model provides incentives to achieve on time completion.	• Risk of cost overruns and time delays is difficult to mitigate for GCP as liquidated damages associated with design and build may not provide as much incentive for the private sector to complete the works on time and on budget. • Limited meaningful transfer of risk with no capital at risk. • Tends to have longer tender periods than the other models as it is necessary to evaluate operation and maintenance risks. • GCP has a residual exposure to support the project should budget overruns occur.

Source: Mott MacDonald

3.2.5 Option 5: Management Contracting

This method of procurement is suitable for fast track, complex and/or projects that have a developing brief. It is less suitable where cost certainty before starting construction is required and where the client wishes to transfer risk to the contractor. It is not considered that this method is suitable for further consideration for C2C.

Further, procurement options involving private finance have not been considered as:

- Public funding is already identified and available thus there is no need
- The size of the scheme does not warrant the need or expense in establishing a private finance model

3.2.6 Procurement Option Assessment

To compare the five procurement options, levels of cost, time and quality certainty have been considered and rated as high, medium or low certainty levels for the project. Based in an initial assessment design and build has been selected, which will be subject to further review.

Table 6: Procurement options assessment

Procurement Option	Level of Certainty		
	Cost	Time	Quality
Traditional Contract	Medium / High	Medium / High	High
Design and Build	High	High	Medium / High

Early Contractor Involvement	Medium	Medium	High
Design, Build, Operate and Maintain	High	High	Low / Medium
Management Contracting	Low	High	Medium / High

Source: Mott MacDonald

3.2.7 Selection of Procurement Strategy

As part of the current stage of scheme development and the OBC, a design and build procurement has been selected as the preferred procurement strategy. However, this is subject to further review as part of the next stage of work in developing the scheme and informing the FBC. The reasoning for selected a design and build procurement method at this stage is discussed further below. The main reasons for selection are:

- This option allows the scheme programme to progress without significant delay during an involved procurement exercise. This allows some key programme activities to be progressed by the design team and will enable certainty of design in a shorter space of time.
- It also achieves an appropriate balance between design progression and contractor input. The design needs to progress sufficiently to allow a consistent basis for tendering between contractors but also allow contractor input to design before final contract award so that issues such as buildability and construction phasing can be appropriately addressed.
- Adopting a design and build approach puts the responsibility for design, including integration, with the contractor and it would be the responsibility of GCP to define its requirements. In relation to the primary procurement objectives, the design and build model will provide GCP with more opportunity to drive value for money and more opportunity to transfer delay risk and interface risks to the contractor. See Table 7 which shows how that selected strategy meets the required outcomes.

Table 7: Procurement strategy against commercial case required outcomes

Outcomes	Design and build procurement
Cost Certainty	Facilitates consistent tendering basis for procurement as design information is sufficiently progressed to compare between submissions.
Minimise Costs	Allows competition between interested parties and adoption of appropriate form of contract
Programme	Allows progression of programme and contributes to achieving certainty on route alignment quickly.
Quality	Competition enabled will bring added value proposals and allows choice of deliver team based on experience and suitability.
Continuity of Knowledge	Allows option to maintain project team and knowledge accumulated.
Risk	Appropriate risk analysis and sharing enabled.
Deliverability	Allows contractor input to design leading to buildable designs
Quality	Requires a detailed specification

Source: Mott MacDonald

3.3 Services

The operation of the current bus services along the C2C corridor is largely on a commercial basis. With regard to the new HQPT services which are expected to operate along the C2C infrastructure, it is not the intention of GCP to be directly involved in their procurement and control as that is not within GCP's powers. The Local Transport Authority (LTA) that has the relevant powers is the

Cambridgeshire & Peterborough Combined Authority (CPCA). The CPCA Mayor's recently commissioned Strategic Bus Review concluded that further work was required including procurement and completion of a business case to assess different delivery model options. Following completion of this latter piece of work, the CPCA Mayor is expected to make a decision on the future preferred option for delivering bus services in early 2021.

In advance of the Mayor's decision, the potential public transport operating models currently available for the C2C project have been identified and the following issues and key questions considered:

- Available operating models for providing services;
- Appetite in the market to engage with those models;
- Impact and influence on fares and patronage;
- Risks; and,
- Commercial implications of objectives for clean high-quality transport such as high frequency services operated by high quality electric vehicles.

3.3.1 Potential operating models

Table 8 sets out the potential operating models considered for the C2C project:

Table 8: Potential operating models

Category	Options
Partnership • Infrastructure delivered by promoter • Vehicles provided by operator • Services delivered by operator wholly or mainly on a commercial basis • Obligations of promoter and operator set out in partnership agreement / scheme	Voluntary Partnership Agreement (VPA) Advanced Quality Partnership Scheme (AQPS) Enhanced Partnership Plan and Scheme (EPP/EPS)
Procurement of vehicles • Vehicles specified and procured by promoter • Leased to operator	Finance or Operating Lease
Procurement of operations • Vehicles provided by operator • Services delivered by operator under contract to the promoter	Route-based Contracts Franchising Use of Transport and Works Act Powers
Integrated procurement of vehicles and operations	See 'Table 9: Potential public transport operating models for C2C'
Integrated procurement of infrastructure, vehicles and operations	Design, Build, Operate and Maintain (DBOM)

Source: Mott MacDonald

The options set out above are considered in detail below however the initial gateway assessment of their practicality and relevance to C2C is as follows:

- **Voluntary Partnership Agreement (VPA)** – not worthy of further consideration. This form of partnership is less prescriptive than the existing Cambridgeshire Guided Busway (CGB) Quality Bus Partnership (QBP) and does not enable the Local Transport Authority (LTA) to set standards for vehicles or service levels aligned with the objectives of the C2C scheme. It is limited to what

operators can offer within the negotiation of an agreement and subsequently deliver, which may fall short of the standards sought to meet the scheme objectives.

- **Advanced Quality Partnership Scheme (AQPS)** – worthy of further consideration. This form of partnership is more prescriptive than the existing CGB QBP and has the potential to go further in supporting the delivery of the C2C project objectives as set out in detail in the Strategic Case as standards for vehicles or service levels aligned with these objectives can be specified. The ability to specify requirements for vehicle emissions and the types of fuel or power used by vehicles is of relevance to the aspirations for the operation of electric or other zero-emission vehicles on the services using the C2C infrastructure.
- **Enhanced Partnership Plan and Scheme (EPP/EPS)** – this approach is both more prescriptive than the existing CGB QBP and the AQPS option. However, the requirements for the EPP/EPS route in terms of the steps towards formal agreement suggest that there would be more advantage in the AQPS approach which requires less by way of plans and is more obviously applied to the C2C route. The EPP/EPS approach could be considered further if market engagement indicates an appetite for this.
- **Route-based Contracts and Franchising** – further consideration of both is relevant, if the commercial market is unwilling or unable to deliver on the aspirations for the operation of electric or other zero-emission vehicles on the HQPT services using the C2C infrastructure.
- The **EPP/EPS and Franchising** options also require further consideration in the light of the outcome of the CPCA Mayor's Strategic Bus Review and the potential operating models for the wider CAM system.
- **Use of Transport and Works Act Powers** – relevant if a Transport and Works Act Order is used to obtain powers to both construct the C2C infrastructure and operate services on this infrastructure. Offers control of the specification and provision of services, and some of the benefits of the Franchising approach, while not being dependent on the outcome of the CPCA Strategic Bus Review.

Types of contract in summary:

- Gross cost (maximises LTA control, but also its financial exposure - LTA retains revenue, operator receives payment for full cost of operation)
- Net cost (maximises operator's incentive to invest and grow patronage, limits LTA's financial commitment, as long as contract is stable - operator retains revenue)
- Diminishing subsidy (operator retains revenue, but has bid on basis of predicted growth in revenue being sufficient to cover reducing the subsidy over time)
- Revenue share (operator retains revenue but has bid on basis of sharing any revenue above an agreed threshold).

Table 10: Potential public transport operating models for C2C

Category	Option	Description	Gateway assessment of practicality and relevance to C2C and CSET Projects
Partnership Infrastructure delivered by promoter Vehicles provided by operator Services delivered by operator wholly or mainly on a commercial basis Obligations of promoter and operator set out in partnership agreement / scheme	Voluntary Partnership Agreement (VPA)	**Key Features** • Replaces Quality Bus Partnerships delivered under the basic powers within Transport Act 1985[4] • A VPA is a joint agreement between the Local Transport Authority (LTA) and some/all local operators. • Under a VPA, operator commitments/actions are linked to local authority commitments/actions which might include joint reviews to identify bus priority measures, LTA capital investment (typically in infrastructure, passenger information systems) and operator capital investment (typically in vehicles) or revenue expenditure on items such as service enhancements, driver training or marketing. • LTA has no control over routes, timetables, frequencies or fares (other than for subsidised services). • Normally there are no legal obligations on either party. The success of the arrangements depends on good working relationships between the local authority and bus operators. There needs to be consensus on what needs to be done and a degree of trust that everyone will deliver "their part of the bargain". **Asset Ownership** • LTA controls on road and any off-road infrastructure, and back office for concessionary fares, Real Time Passenger Information (RTPI) systems etc. • Operator owns/leases vehicles, depots etc., and back office for commercial ticketing schemes, on board systems. • For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator	**Practicality** A VPA could be applied to the C2C and CSET projects but this assumes that the core services are operated on a commercial basis (i.e. without subsidy – subsidy would imply some form of contractual relationship between the operator and the LTA) [5]. **Relevance** This form of partnership is less prescriptive than the existing Cambridgeshire Guided Busway Quality Bus Partnership (a statutory Quality Partnership Scheme within the meaning of Part II of the Transport Act 2000). It does not enable the LTA to set standards for vehicles or service levels and is limited to what operators are prepared to offer within the negotiation of an agreement and subsequently deliver. Given the limitations of a VPA as a model to support the delivery of the C2C and CSET scheme objectives, and the intention of CPCA to explore other options for bus service provision using the powers and opportunities provided by the Bus Services Act 2017, this option is unlikely to be appropriate for further consideration for the C2C and CSET projects.

[4] e.g. Milton Keynes where the council reconstituted the QBP signed in 2007 as a Voluntary Partnership Agreement (VPA) under the Transport Act 2000, as amended by Section 46 of the Local Transport Act 2008.

[5] A VPA would not preclude some services within the scope of the agreement, for example evening and Sunday services, being subsidised by and operated under contract to the LTA.

		would own and maintain any equipment required on the vehicles (e.g. guidewheels or sensors). **Risk Allocation** • Risk for LTA that services are not to desired standard (e.g. frequency, hours of operation or vehicle quality) or do not meet the LTA objectives in other ways (e.g. fare discounts for disadvantaged groups). • Risk for LTA that operators do not meet service performance requirements. • Risk for LTA that services may be withdrawn if they are not commercially viable, putting pressure on LTA budgets. • Risk for operator that services provided on a commercial basis may not be viable. • Risk for operator that LTA is not able to meet its commitments. • Risk to both parties that patronage/cost modelling is over optimistic. • Risk that operator's return on investment is undermined by low quality competition from an operator that is not a party to the VPA.	

	Advanced Quality Partnership Scheme (AQPS)	**Key Features** • An AQPS provides for a "stronger" partnership than the VPA model. • The AQPS is made by the LTA following consultation with operators and places a legal obligation on both parties to deliver on their commitments. Despite the legal obligations, the success of the arrangements depends on good working relationships between the local authority and bus operators. There needs to be consensus on what needs to be done and a degree of trust that everyone will deliver "their part of the bargain". • The LTA commits to take steps ("measures") to support local bus services (e.g. by investing in infrastructure, but not limited to this). • In exchange the bus operators are required to meet specific local standards. Operators that do not meet the required standards are unable to use infrastructure provided by the local authority and specified in the scheme. • Such standards usually apply to a specific route or corridor, but an AQPS may cover a wider geographical area. • The standards that may be specified in an AQPS are: o Vehicle requirements o Requirements about frequency or timing of services o Requirements about maximum fares o Requirements about emissions and the types of fuel or power used o Specifying a ticketing structure and how passengers can pay for journeys o Requirements for the provision of passenger Information o Specifying how local bus services, fares or ticketing arrangements should be marketed or publicised. • The LTA can only implement standards for service frequency and maximum fares if there are no outstanding	**Practicality** An AQPS could be applied to the C2C and CSET projects but this assumes that the core services are operated on a commercial basis (i.e. without subsidy – subsidy would imply some form of contractual relationship between the operator and the LTA) [7]. **Relevance** An AQPS is a development of the Quality Partnership Scheme model introduced by the Transport Act 2000 and successfully adopted for the existing Cambridgeshire Guided Busway. Many of the outcomes that an AQPS has the potential to deliver - such as better buses (e.g. Wi-Fi, lower emissions), improved passenger information, route branding and/or marketing, smart cards and contactless payments - are already being delivered by operator and LTA investment on the existing busway. This form of partnership is more prescriptive than the existing Cambridgeshire Guided Busway QBP and has the potential to go further in supporting the delivery of the C2C and CSET scheme objectives. However, care should be taken to set standards at a level that does not lead to operators responding in a way that is not intended and could undermine scheme objectives, e.g. by reducing commercial services or increasing fares. The ability to specify requirements for vehicle emissions and the types of fuel or power used by vehicles is of relevance to the aspirations for the operation of electric or other zero-emission vehicles on the High-Quality Public Transport (HQPT) services using the C2C and CSET infrastructure. An AQPS should therefore be given further consideration for the C2C and CSET projects. An AQPS would not give the level of control over bus service provision envisaged in the CPCA Strategic Bus Review report.

[7] An AQPS would not preclude some services within the scope of the scheme, for example evening and Sunday services, being subsidised by and operated under contract to the LTA.

		"admissible objections"[6] from operators who would be affected by the scheme. • The LTA may refer a breach by an operator of the obligations of an AQPS to the Office of the Traffic Commissioner and the Traffic Commissioner may take enforcement action against the operator. • An AQPS must remain in operation for at least five years. An end date must be specified but can be subsequently varied. There is no upper time limit. **Asset Ownership** • LTA controls on road and any off-road infrastructure, and back office for concessionary fares, RTPI systems etc. • Operator owns/leases vehicles, depots etc., and back office for commercial ticketing schemes, on board systems. • For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator would own and maintain any equipment required on the vehicles (e.g. guidewheels or sensors). **Risk Allocation** • Risk for LTA that services do not meet the LTA objectives in other ways (e.g. fare discounts for disadvantaged groups). • Risk for LTA that operators do not meet service performance requirements. • Risk for LTA that services may be withdrawn if they are not commercially viable putting pressure on LTA budgets. • Risk for operator that services provided on a commercial basis may not be viable • Risk to both parties that patronage/cost modelling is over optimistic.	It is envisaged that the CPCA's CAM network will be delivered and operational as soon as five years after the C2C and CSETS schemes becoming operational. This five-year time period aligns well with the minimum duration of an AQPS and a scheme made for a period of five years could be varied to cover a longer period if required.
	Enhanced Partnership Plan and Scheme (EPP/EPS)	**Key Features** An Enhanced Partnership (EP) is an agreement between the LTA and the majority of the local bus operators in the area to work together to improve local bus services. It includes a clear vision of	**Practicality** An EPP/EPS could be applied to the C2C and CSET projects, but this assumes that the services are operated on a commercial

[6] The grounds for such objections are specified in regulations and include that it would not be commercially viable for that operator, acting in a competent and efficient manner, to provide services to the standard specified.

		the improvements that the EP is aiming for (known as an EP Plan [EPP]) and accompanying actions to achieve them (set out in one or more EP Schemes [EPS]). The Enhanced Partnership Plan: • Analyses performance of the local bus market; • Sets the geographical area or areas of application; • Sets bus improvement objectives; • Explains how long the proposals will last; • Explains how the related scheme will achieve the plan objectives. The Enhanced Partnership Scheme: • Sets out the detailed actions to be taken by the authority; • Sets out the operations requirements for services in the area, for example: vehicle specifications, branding, payment methods, ticketing structure and real-time information requirements; • Sets out the route requirements for services in the area including frequency of services and timetables. The bus operators must be given an opportunity to participate in the development of an EP and have a formal say on the process at several key stages. At these points the EP cannot proceed unless formal agreement from a defined proportion of operators is obtained. The EPP/EPS route places a legal obligation on both parties to deliver on their commitments. Once again, the success of the arrangements depends on good working relationships between the local authority and bus operators. There needs to be consensus on what needs to be done and a degree of trust that everyone will deliver "their part of the bargain". **Asset Ownership** • LTA controls on road and any off-road infrastructure, and back office for concessionary fares, RTPI systems etc. • Operator owns/leases vehicles, depots etc., and back office for commercial ticketing schemes, on board systems. • For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator	basis (i.e. without subsidy – subsidy would imply some form of contractual relationship between the operator and the LTA). **Relevance** Many of the example outcomes for an EP cited by the Department for Transport (DfT) - better buses (e.g. Wi-Fi, lower emissions), improved passenger information, route branding and/or marketing, smart cards and contactless payments - are already being delivered by operator and LTA investment on the existing busway. A key outcome that is identified for the EPP/EPS model over the AQPS is the delivery of multi-operator tickets, including price setting, common ticket rules and fare zones and uniform discounts for apprentices and other groups. This third level of partnership is more prescriptive than the existing Cambridgeshire Guided Busway QBP and should therefore be given further consideration for the C2C and CSET projects. However, the requirements for the EPP/EPS route in terms of the steps towards formal agreement suggest that there would be more advantage in the AQPS approach which requires less by way of plans and is more obviously applied to the C2C and CSET corridors. An EPP/EPS would not give the level of control over bus service provision envisaged in the CPCA Strategic Bus Review report. It is envisaged that the CPCA's CAM network will be delivered and operational as soon as five years after the C2C and CSETS schemes becoming operational. There are no set time limits for an EPP/EPS, but the initial duration of the EPP and associated schemes should be specified together with review dates. **Summary** DfT admit that most of what can be specified in an AQPS and an EPS can be delivered through a voluntary partnership - which can involve some, but not all, of the local bus operators - provided there is full agreement between the authority and all of the affected operators (for example the West Midlands and Liverpool City Region Bus Alliances, both of which are VPAs).

		would own and maintain any equipment required on the vehicles (e.g. guidewheels or sensors). **Risk Allocation** • Risk for LTA that services may be withdrawn if they are not commercially viable putting pressure on LTA budgets. • Risk for LTA that operators do not meet service performance requirements. • Risk for operator that services provided on a commercial basis may not be viable • Risk to both parties that patronage/cost modelling is over optimistic.	The AQPS/EPS models are of benefit compared to a VPA where: • Operators and the authority feel it would help for all parties to have a legislative obligation to deliver "their side of the bargain". • There are concerns about operators' return on investment being compromised by the emergence of lower quality competing services.
Procurement of vehicles Vehicles specified and procured by promoter Owned or leased from finance provider by promoter Leased to operator by promoter	Finance or Operating Lease	**Key Features** The vehicles for the route are specified and procured by the promoter. The promoter will need to work with the operator to ensure compatibility of on-board systems to avoid expensive retrofitting. Where the promoter has capital funding available for vehicles and there is certainty regarding the use of the vehicles for their full economic life, outright purchase may be an option. Otherwise, vehicles may be leased by the promoter from an asset finance provider. Finance and operating leases are off-balance sheet finance packages which generally exclude the provision of routine maintenance. The finance company always owns the vehicles and will claim any capital allowances available. Both types of lease are typically for periods of three to seven years. It would therefore be possible to align the primary period of a lease with the duration of a route-based contract if this does not exceed an initial period of seven years. Providing vehicles in this way for an 'operation only' contract requires great care in the contractual specification of responsibilities for maintenance and repairs to the vehicle(s), which would normally lie with the operator. The finance company will expect vehicles to be returned at the end of the lease period in a condition that allows them to be	**Practicality** Specification and procurement of the vehicles by the promoter may be advantageous: • If the vehicle specification proposed is significantly different to the typical specifications and standards for operators' existing fleets. • If commercial operators have no history with the type of vehicle proposed and are unwilling to invest in an unproven product. • Where the promoter has access to capital, but no funding to cover revenue costs, to enable the promoter to fund the capital cost of vehicles to reduce the revenue cost of their operation. • If the operation on the C2C and CSET corridors is expected to be a precursor to a wider CAM network using different vehicles (i.e. the vehicles will only have a short life on C2C and CSET corridor services). • If the services are operated on a contract/franchise basis. A finance lease would enable the promoter to procure and finance a bus fleet for use by the operator with rental costs spread over the duration of the new route contract if applicable. **Relevance** Further consideration is relevant, particularly in the event of early market soundings identifying a lack of appetite by operators for investment in clean vehicles to deliver HQPT services on the C2C and CSET corridors. However, a verdict on the relevance of this

		marketable for the age and mileage stated in the lease agreement. The conditions for return of the vehicle will be specified in the lease agreement and additional charges will apply if these are not met. In order to maximise the residual value of the vehicles it would be in the promoter's interest to ensure that they are maintained in good condition by the operator. It would therefore be advisable for the promoter to institute an annual independent audit of the vehicle fleet and maintenance systems and to include a mechanism within the contract regime to ensure that any issues arising from these audits were promptly addressed by the operator. At the end of the agreement the promoter could either simply hand the vehicles back to the finance company or negotiate an extended period of use in line with any contract extension granted to the operator. The principal differences between a finance lease and an operating lease are as follows: ***Finance lease:*** • The full cost of the vehicle is recovered over the lease period. • The final cost to the promoter is not fixed but depends on the proceeds received from the sale of the vehicles at the end of the agreement. The promoter is thus exposed to the risk of the vehicles depreciating in value at a greater rate than expected and the sale proceeds falling short of the anticipated residual value at the end of the agreement • At the end of the agreement the vehicle is either sold, with the lessee receiving the major share of the proceeds, or a secondary lease period can be negotiated in line with any contract extension granted to the operator. ***Operating lease:*** • The finance company takes the risk of the vehicle losing value. The finance company will build the estimated residual value of the vehicle at the end of the agreement	option may well be linked to the outcome of assessment of other options on the table.

		term into the transaction. This means that monthly rental charges will be lower than for a finance lease. • The residual value of vehicles will be affected by their mileage and thus rentals will be based on an agreed mileage allowance with additional charges for excess mileage. A lease agreement for a period in excess of seven years could include provision for the mid-life refurbishment of vehicles, thus enhancing the residual value of the vehicles at the end of the agreement. • There may be the option of sharing the residual value risk in return for a reduction in the monthly rental charge. This involves the expected residual value of the leased vehicles being agreed between the finance company and the customer at the outset of the lease. If the agreed residual value is not achieved or exceeded on disposal of the vehicles at the end of the lease, the resultant pain or gain is shared in accordance with a formula specified in the lease agreement. **Asset Ownership** • If purchased outright, vehicle ownership lies with the promoter. • If leased, the promoter will hold the leases for the vehicles, but ownership lies with the finance company. • The LTA controls the back office for concessionary fares, RTPI systems etc. • The operator holds the vehicles on a lease from the promoter but will provide depots and back office for commercial ticketing schemes, on board systems. • For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator would maintain any equipment required on the vehicles (e.g. guidewheels or sensors). **Risk Allocation** • If purchased outright, the residual value risk lies with the promoter. • With a finance lease the residual value risk falls on the promoter. • With an operating lease the residual value risk falls on the leasing company.	

		• Risk that vehicles, when returned to the promoter, are not in an acceptable condition to be returned to the leasing company or for handover to another operator. • Risk that vehicles when delivered require expensive retrofitting of on-board systems. • Risk to the operator that the vehicles provided by the promoter are unreliable and/or expensive to maintain.	
Procurement of operations Vehicles provided by operator Services delivered by operator under contract to the promoter	Route-based Contracts	**Key Features** LTAs have powers under the Transport Act 1985 to secure the provision of local bus services under contract where they consider this appropriate "to meet any public transport requirements within [their area] which would not in their view be met apart from any action taken by them for that purpose". In practice this means where it is considered socially necessary to have a bus service, but no bus operator will provide this service commercially. • The promoter or LTA will develop a specification for the required services to operate on the public transport corridor. • This could be fully detailed covering all aspects of the vehicle specification, routing, timetables, frequencies and fares or it could be less detailed, inviting bidders to suggest their own options. • The contract could be an 'operation only' contract with the promoter providing the vehicles and possibly other vehicle related infrastructure. • Contract length is limited by the Transport Act 2000 to eight years. • The contract could cover all services on the corridor or multiple contracts could be let. • Potentially this gives the LTA full control over all aspects of the services on the corridor. • Use of these powers to provide additional services on a corridor with existing commercial services is likely to be challenging and contentious with operators, particularly if the effect is to abstract revenue from these existing services. • Provides contractual obligations on both parties. • Types of contract: o Gross cost (maximises LTA control, but also its financial exposure - LTA retains revenue,	**Practicality** A route-based contract or set of contracts would be suitable for delivery of the services along the C2C and CSET corridors if: • The commercial operation of an HQPT service supporting the delivery of the C2C and CSET scheme objectives cannot be achieved. • The early years of operation are expected to be a precursor to a wider CAM network and a route/corridor-based contract would facilitate a stable period of operation encouraging passenger growth prior to future phases of CAM coming on stream in later years. The practicality of a route-based contract model may rely on a significant level of revenue funding to kickstart the operation in the early years. It is unlikely that funding on the required scale would be available within existing LTA revenue budgets, but where major developments are planned which would benefit from the new C2C and CSET public transport infrastructure, developer contributions may offer an alternative source of short-term kickstart revenue funding. In practice a route-based contract would be little different from a single route franchise. **Relevance** A route-based contract or set of contracts should be given further consideration for the C2C and CSET projects. This would give much of the level of control over bus service provision envisaged in the CPCA Strategic Bus Review report on the two corridors but would not prevent competition from overlapping commercial services.

		operator receives payment for full cost of operation) ○ Net cost (maximises operator's incentive to invest and grow patronage, limits LTA's financial commitment, as long as contract is stable - operator retains revenue) ○ Diminishing subsidy (operator retains revenue, but has bid on basis of predicted growth in revenue being sufficient to cover reducing the subsidy over time) ○ Revenue share (operator retains revenue but has bid on basis of sharing any revenue above an agreed threshold). **Asset Ownership** • LTA controls on road and any off-road infrastructure, and back office for concessionary fares, RTPI systems etc. • Operator owns/leases vehicles, depots etc., and back office for commercial ticketing schemes, on board systems. • For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator would own and maintain any equipment required on the vehicles (e.g. guidewheels or sensors). **Risk Allocation** • Risk for LTA that tender price is greater than budget available. • Risk of challenge to LTA if contracted services are deemed to be competing with commercial bus services. • Risk for LTA that operators do not meet service performance requirements, however this would be significantly mitigated by the contractual performance regime. • Revenue risk allocation depends on type of contract: ○ Gross cost, also known as minimum cost (LTA has revenue risk, operator receives payment for full cost of operation) ○ Net cost, also known as minimum subsidy (operator has revenue risk, but risk to LTA if the operator has misjudged the situation)	There may be issues to consider in relation to integration with other services and abstraction of revenue from existing commercial services if new operators enter the local market as a result of the procurement process. In such circumstances there is a risk of the incumbent operators responding in a way that is not intended and could undermine scheme objectives, e.g. by reducing commercial services or increasing fares. It is envisaged that the CPCA's CAM network will be delivered and operational as soon as five years after the C2C and CSETS schemes becoming operational. This five-year time period fits well with the typical length of a route specific contract which could be extended up to a maximum of eight years.

		○ Diminishing subsidy (operator has revenue risk, but risk to LTA if the operator has misjudged the situation) ○ Revenue share (operator has revenue risk, but risk to LTA if the operator has misjudged the situation). • Risk that the contracts are not sufficiently responsive to growth in demand, or patronage falling below forecast levels.	
	Franchising	The Bus Services Act 2017 provides Mayoral Combined Authorities (MCA) with the powers to implement bus franchising in their area – akin to the system operated by Transport for London. The relevant MCA requires consent from the Secretary of State for Transport before they can initiate the franchising process. The Secretary of State's role is to determine whether the authority has clear aspirations which will benefit passengers, a sensible plan in place and the right attributes to make franchising a success. If franchising is taken forward it is not a quick process. At a high-level, there are five key stages: • Preparation of an assessment of the proposed franchising scheme – akin to the development of a transport business case including: ○ requesting any relevant information required from operators to develop the assessment; ○ commissioning a report to be prepared by an independent auditor on the assessment. • Consultation and engagement; • Responding to the consultation and, if the decision is to make a scheme, making and publishing the scheme. • Transition, including staff transfers; and • Implementation, including the operation of the service permit scheme. **Key Features** If the franchising scheme is implemented, the franchise authority will have full control over the operational requirements for services in the area: • vehicle specifications;	**Practicality** The Bus Services Act powers envisage franchising being introduced over a wider area than the single route corridors of the C2C and CSET projects. The preparation costs for a franchising scheme limited to the C2C and CSET corridors are likely to be prohibitive. CPCA is currently procuring work to review bus service delivery options and develop comparative business cases for a range of operational models, including franchising. The expected timescale for the completion of this work is to form the basis of a mayoral decision on the strategic future approach for bus delivery in early 2021. Some of the benefits of the franchising approach (in terms of control of the specification and provision of the services – at least at an individual route level) could potentially be achieved without the long process within the current "mixed economy" by using the existing tendering powers available to all LTAs. **Relevance** Given the potential timescale to get to implementation of a franchise scheme it should be given further consideration for the C2C and CSET projects as it would give the control envisaged by the CPCA Mayor on the two corridors. However, the "single corridor" nature of the projects perhaps means that a franchise option should be considered across wider areas: • CSET plus all bus services in the A1301/A1307 corridors

		• branding;
		• payment methods and ticketing structure;
		• real-time information requirements;
		• the route requirements for services in the area including frequency of services and timetables.
		
		The franchising scheme provides contractual obligations on both parties.
		
		The contracts let under the franchising scheme could be single route (as in London) or packages of routes (as is common in Europe).
		
		• Types of contract:
		  ○ Gross cost (Maximises authority's control, but also its financial exposure - LTA retains revenue, operator receives payment for full cost of operation)
		  ○ Net cost (Maximises operator's incentive to invest and grow patronage, limits authority's financial commitment, as long as contract is stable - operator retains revenue)
		  ○ Diminishing subsidy (operator retains revenue, but has bid on basis of predicted growth in revenue being able to result in reducing the subsidy over time)
		  ○ Revenue share (operator retains revenue but has bid on basis of sharing any revenue above agreed threshold).
		
		Asset Ownership
		
		Asset ownership will depend on how the franchising scheme is structured but at its simplest could be this:
		
		• LTA controls on road infrastructure, and back office for concessionary fares, RTPI systems etc.
		• Operator owns/leases vehicles, depots etc., and back office for commercial ticketing schemes, on board systems.
		• For a guided system, the LTA would own and maintain the guidance system infrastructure while the operator would own and maintain any equipment required on the vehicles (e.g. guidewheels or sensors).
			• C2C plus all bus services in the A428/B1046 corridor
			
			It is envisaged that the CPCA's CAM network will be delivered and operational as soon as five years after the C2C and CSETS schemes becoming operational. A franchising scheme is likely to be indefinite. The length of individual contracts awarded under such a scheme is flexible but requires further consideration.
			
			The potential operating models for the wider CAM network also require consideration, including the following questions:
			
			• Is CAM to be operated under legislation governing the construction, operation and maintenance of buses, and to be delivered as part of a wider franchised bus network?
			• Is CAM a mode in its own right, part of a system comprising rail, metro and a bus network?

		Risk Allocation
		• Risk for LTA of legal challenge to franchise scheme.
		• Risk for LTA that tender prices are greater than budget available.
		• Risk for LTA that aspirations are greater than budget available.
		• Risk for LTA that operators do not meet service performance requirements, however this would be significantly mitigated by the contractual performance regime.
		• Revenue risk allocation depends on type of contract:
		  o Gross cost, also known as minimum cost (LTA has revenue risk, operator receives payment for full cost of operation);
		  o Net cost, also known as minimum subsidy (operator has revenue risk, but risk to LTA if the operator has misjudged the situation).	

	Use of Transport and Works Act powers	Subject to the project being guided transport schemes within the scope of the Transport and Works Act 1992, a Transport and Works Act Order (TWAO) could be used to obtain the necessary powers to both construct and operate the scheme. The promoter could use operating powers provided by a TWAO to tender an operations contract without the limitations of the powers available to LTAs under the Transport Act 1985, Transport Act 2000 and Bus Services Act 2017. The options available for the form of such a contract, asset ownership and risk allocation would be similar to those outlined above for a route-based contract or a single route franchise. Alternatively, operating powers provided by a TWAO could be used to facilitate the delivery of operations through a Voluntary Partnership Agreement or an Advanced Quality Partnership Scheme.	**Practicality** This is a practical option for the project, subject to Transport and Works Act Orders granting operating powers being gained by the promoter. It offers some of the benefits of the franchising approach in terms of control of the specification and provision of the services, while not being dependent on the outcome of the work planned by CPCA to review bus service delivery options and develop comparative business cases for a range of operational models, including franchising. **Relevance** The use of operating powers provided by a TWAO to tender an operations contract should be given further consideration for the project. This would give much of the level of control over service provision envisaged in the CPCA Strategic Bus Review report on the two corridors but would not prevent competition from overlapping commercial services not using the scheme infrastructure.

			There may be issues to consider in relation to integration with other services and abstraction of revenue from existing commercial services. There is a risk of bus operators providing existing commercial services on the corridor objecting to an application for a TWAO including operating powers that would enable the promoter to award exclusive rights to operate services using the scheme infrastructure.
Integrated procurement of vehicles and operations		This approach would combine options discussed above under procurement of vehicles and procurement of operations.	The procurement of vehicles by the promoter would be a prerequisite for this. However, in circumstances where this has been determined to be appropriate and beneficial, an integrated approach to procurement of vehicles and operations would have the following advantages: • Providing the opportunity to ensure that the length of an operating contract is aligned with the period for which vehicles are leased by the promoter. • Enabling the risk of additional charges being imposed by the finance company if vehicles are not returned at the end of the lease period in the condition specified in the lease agreement to be transferred to the operator through the specification of contractual obligations for inspection, maintenance and repair of the vehicles. • Enabling suppliers to bid with the benefit of prior knowledge of the technical specification and performance characteristics of the vehicles that they would be required to operate and maintain, the vehicle manufacturer's recommended preventive maintenance schedule and the condition in which the vehicles must be handed back at the end of the contract.
Integrated procurement of infrastructure, vehicles and operations		See Section 3.2.4 Design, Build, Operate and Maintain (DBOM).	From an operations perspective, a key factor influencing the relevance of this option to the C2C project is the complexity of the interfaces between the vehicles and infrastructure and the associated interface risks to the promoter. For schemes involving the operation of rubber-tyred large passenger vehicles on road-based infrastructure at ground level

			these interfaces, notably vehicle tracking and docking of vehicles with stop platforms, are not highly complex and well understood. Interface risks to the promoter are therefore likely to be low and manageable. The elements of the wider system infrastructure most closely linked to vehicles and operations are the vehicle depot and control room. If the vehicles are to be procured by the promoter there may be merit in the promoter also procuring and providing the depot. The provision of both vehicles and a depot would reduce barriers to a new operator entering the local market.

Source: Mott MacDonald

3.3.2 Maintenance of infrastructure

Table 11 sets out and summarises the potential procurement options for the maintenance of infrastructure, with the advantages and disadvantages of each option.

Table 11: Maintenance of infrastructure potential procurement strategy options

Option no.	Option	Advantages	Disadvantages
1	Employer Managed/ Maintained In-House	• Employer has full control. • "Value for money" solutions can be applied.	• Requires in-house capabilities (resources, infrastructure, equipment).
2	Employer management of approved supplier(s)	• Employer retains control over maintenance remedies.	• Delays in co-ordination of activities. • Employer has less control over "value for money".
3	Employer Term Maintenance contract. Managing Agent Contractor (MAC)	• Fully managed by MAC(s) who are experienced in maintenance. • Reduction of Employer Risk.	• May not be as cost effective as option 1 and 2. • Employer has little control over maintenance operations. • Employer should monitor quality of maintenance to protect the asset.
4	Extension of construction contract Defects Liability Period	• Continuity of Contractor involvement. • Contractor familiarity with assets. • Advance agreement and allocation of costs. • Reduction of Employer Risk.	• May not be as cost effective as option 1 and 2. • Employer has little control over maintenance operations. • Employer should monitor quality of maintenance to protect the asset.
5	Bus Service Operator maintained	• Operator able to manage maintenance operations to mitigate disruption to Level of Service. • Reduction of Employer Risk.	• Operators may be inexperienced in maintenance of infrastructure. • May not be as cost effective as option 1 and 2. • Employer has little control over maintenance operations. • Employer should monitor quality of maintenance to protect the asset.
6	Management company Joint Venture (Employer /Operator/MAC)	• All parties have a common interest in maintaining assets. • Employer has input into maintenance management.	• More difficult to set up Contract. • Decisions may take longer.
7	Management company Joint Venture (Employer/Operator/ Contractor) - Fixed Price	• Employer and Operator incentivised to protect assets. • Contractor has familiarity with assets. • Advance agreement and allocation of costs. • Operator incentivised to provide high Level of Service.	• More difficult to set up Contract. • Decisions may take longer.

Source: Mott MacDonald

It should be noted that the option decided upon will depend to an extent on the arrangement used for the Operation of the bus service, which is yet to be determined, as noted above.

3.3.3 Procurement to date

The existing contracts in place for the C2C project have been established through existing frameworks and specific commercial arrangements and are all managed by CCC. These include contacts with the following advisors for technical services:

- Mott MacDonald - scheme coordination, design management, transport modelling, environmental advisors, business case development, communications and procurement advisors
- Strutt & Parker - Planning advisors
- Pinsent Mason - Legal advisors
- Bruton Knowles - Land agents

3.3.4 Lessons learned

3.3.4.1 Case study - Cambridge Guided Busway

The Cambridgeshire Guided Busway (CGB), connects Cambridge, Huntingdon and St Ives. It is the longest guided busway in the world.

Two guided sections make up 16 miles (25 km) of the route. The northern section uses the course of the former Cambridge and Huntingdon railway. The southern section uses part of the former Varsity Line to Oxford. Construction began in March 2007 and it was opened on 7 August 2011 after a succession of delays and cost overruns.

The parties to the construction contract, CCC and BAM Nuttall had significant disputes on the cost of the works and the time for completion.

CCC commissioned EC Harris to undertake an independent review of the project with the objective of identifying any lessons that can be learned and used on future projects. This is documented in the report Cambridgeshire Guided Busway Independent Review, August 2014.

The main conclusions from the review were that:

- The contract conditions and contract administration were appropriate for the time. There have been subsequent improvements made to the New Engineering Contract (NEC) (now edition 4) and the increasing use of Early Contractor Involvement (ECI) contracts to de-risk the project by engaging the Contractor earlier in the design process.
- On the Busway the procurement route and form of contract was to some extent driven by the funding regime dictated by DfT's major scheme funding requirements which discouraged an ECI form of contract.
- ECI contracts allow relationships to be built up between client, contractor and the contract administrator. It allows the Contractor to contribute to the design process to ease buildability and finally allows enough time to properly plan and de-risk the project, thus overall ensuring delivery to time and budget, if not improving on time and budget.
- At present there remains a significant risk to a Local Authority if, having engaged an ECI contractor to develop the design and de-risk the project the scheme ultimately fails to gain Full Approval from the DfT, in which case the Local Authority is left with a major cost with no benefit.

3.3.4.1.1 Relevance to C2C

In May 2019 Mott MacDonald and representatives from the GCP undertook a lessons learnt workshop covering all GCP major schemes and previous schemes such as the CGB. Most lessons learnt were more related to contractual matters than procurement strategy although some important features included:

- Gateway reviews are a key tool in scheme development and that GCP will continue to adopt this review process in the development of procurement strategies.
- Risk allocations developed within overall procurement strategies should not be modified during contract execution without full understanding of the employer's exposure.
- Procurement should consider how interface risk with external parties are best managed.
- Procurement should consider how to commission services prior to 'final' handover of fixed infrastructure.
- Mechanisms to encourage innovation and efficiencies should be considered early in the procurement/contract strategy process.
- Some aspects of scheme delivery have greater exposure to unforeseen delay (e.g. civil engineering works and weather). Take this into account.
- Novation of specific disciplines should be considered if benefits would accrue.
- Procurement should allow for a final 'benefit realisation' phase.

3.3.4.2 Case study – Leigh Salford Manchester Busway

The Leigh Salford Manchester (LSM) Busway opened in April 2016 and has delivered a HQPT service linking Leigh, Atherton, Tyldesley, Ellenbrook, Salford and Manchester via a guided busway and on-highway bus priority measures.

Services run on 21km of segregated bus measures, of which 7.5km, between Leigh and Ellenbrook, is a kerb-guided busway, with the remainder on-highway.

The scheme includes:

- A guided section including seven pairs of high-quality stops
- Park and Ride sites at three locations
- Enhanced passenger waiting facilities at Leigh Bus Station
- Highway and bus priority improvements
- A new premium bus service between Leigh, Atherton, Tyldesley and Manchester city centre
- Extensive pedestrian and cycling improvements along the corridor

Construction started in 2013 and services commenced in 2016.

The procurement strategy implemented the scheme through a range of contractual (conventional design and construct and design and build) packages and responsible authorities which are highlighted in the table below.

Table 12: LSM Busway contractual packages

Infrastructure / service delivered	Description	Contract awarded to	Contract managed by	Key challenges
Guided section – Leigh to Ellenbrook	HQPT link connecting destinations in Wigan, Salford and Manchester	Balfour Beatty	TfGM	Significant negative community feeling towards the scheme. Significant quantity of earthworks material that needed to be moved. The innovative nature of the construction techniques. Significant environmental challenges. The formation and planting of a 25,000 tree community woodland on an adjacent site. The level of direct interface with key stakeholders and the general public along the corridor. Minimising disruption in the interface with 8 highway junctions and the highway network. Significant utility diversions were required.
Leigh, Atherton and Tyldesley town centres	Range of on-highway junction, bus, pedestrian and cyclist improvements	North Midland Construction	Wigan Council	Agreeing the final schemes and associated highway changes with stakeholders initially. Managing the construction of the various scheme elements whilst still operating a live highway network and maintaining town centre activity.
Leigh Bus Station	£1 million of investment in the fabric and facilities at the bus station	Jamieson Contracting	TfGM	Delivering the improvements whilst maintaining an operational bus station.
A580	Delivery of a range of bus priority, junction and pedestrian improvements between Ellenbrook and Pendleton in Salford	Galliford Try	Salford City Council	Managing the construction of the works whilst maintaining through flow along and across the A580 for the large numbers of vehicles that use the corridor. Completing a significant programme of utility diversions. Managing the design and construction of the scheme in close proximity to Highways England infrastructure.
Busway service		First Manchester	TfGM	n/a

Source: https://transportknowledgehub.org.uk/case-studies/leigh-ellenbrook-guided-busway/

The scheme was delivered successfully and the busway service was procured through a Competitive Dialogue procurement process and was awarded to First Manchester in October 2014. The service commenced on 3 April 2016.

3.3.4.3 Case study – Luton to Dunstable Busway

The Luton Dunstable Busway is a 10-kilometre bus only road that runs from Luton to Houghton Regis in Bedfordshire. It provides a quick and efficient way for passengers to travel between two main town centres, using the disused Luton-Dunstable railway corridor.

The work included the construction of seven new bridges and refurbishment/reconstruction of three bridges along the route, the construction of four new high specification bus stops and a major bus interchange at Luton Railway Station - resulting in links to Luton Town Centre, the railway network and providing easy access to Luton Airport.

A 7.5 kilometre section of the busway is 'guided', through which buses will use a fixed corridor formed from six metre long precast concrete beams.

The Design and Build Contract was awarded on the 10 May 2010 and was successfully handed over to Luton Borough Council on the 16 September 2013.

An integrated joint venture design supported the main contractor on the tender design of the busway, detail design, construction details, as-built drawings and site support.

3.3.4.4 Case study – Belfast Glider

Glider is a bus rapid transit system in Belfast, Northern Ireland, designed to improve the efficiency of mass transit in the city by connecting East and West Belfast and the Titanic Quarter via the city centre. The service is operated by Translink. Translink is the brand name of the Northern Ireland Transport Holding Company (NITHCo), a public corporation in Northern Ireland which provides the public transport in the region. NI Railways, Ulsterbus and Metro are all part of Translink.

There are two routes, G1 (West to East Belfast) and G2 (city centre to Titanic Quarter). The busways total 15.2 miles (24.5 km) in length using both dedicated bus lanes and mixed traffic lanes. Costing approximately £100m of public funds, construction started in 2014, and opened in late 2018.

In 2014 the first construction began on the transit system and by 2015 several sections were partially built.

In December 2015, the Northern Ireland Executive confirmed that the project would go ahead as planned. Because of budget restrictions, the opening of the system was delayed until 2018.

Infrastructure was procured primarily through a series of conventional design and construction contracts. Van Hool NV were awarded a contract to supply a fleet of 30 articulated vehicles.

3.3.4 Relevance to C2C

Moving into the next phase of scheme development for C2C, GCP and the project team shall look to actively engage with the promotors of the aforementioned schemes to understand in further detail, the lessons that can be learnt and best practice that relates to C2C.

3.3.5 Procurement timescales

The following table illustrates key dates in the procurement process.

Table 13: Procurement timescales

Key Task	Start Date	End Date
Preparation	21 June 21	24 Sep 21
Reference design	12 June 21	17 Sep 21
Invite to tender	27 Sep 21	01 Oct 21
Tender period	04 Oct 21	03 Dec 21
Return and assessment	06 Dec 21	25 March 22
Standstill (2 week)	28 March 22	08 April 22

Source: Mott MacDonald

3.4 Procurement method comparisons

The section sets out the in-principle strategy for procurement of consultant and contractor services to deliver the C2C project. Consultant services extend to design and advisory services to GCP and contractor services include construction of the scheme.

The highways industry uses a number of recognised procurement methods for delivering civil engineering and highway schemes. Each procurement method can be used for selecting a Service Provider.

Several procurement methods have been considered for the C2C project. These options are set out in 3.2 and 3.3 alongside the advantages and disadvantages of each.

3.5 Contractor framework contracts

Several framework contracts available for appointment of contractors have been considered. These options are set out in Table 14 alongside the advantages and disadvantages of each.

Table 14: Advantages and disadvantages of existing framework contracts for appointment of contractors

Framework	Advantages	Disadvantages
Eastern Highways Alliance (EHA)	• CCC is a member of the EHA. • Framework is tried and tested in Cambridgeshire. • The Framework has been designed to meet the requirements of current and potential future Alliance members for project delivery specifically in terms of cost, quality, and timescales.	• Framework Contract due to expire on 31/03/20 though advised that it will be re-tendered to extend beyond this date. • Framework is designed to deliver construction projects costing between £2m and £20m. Estimated construction cost of the Yellow options is circa £25m. However, schemes above £20m might be acceptable subject to approval by the EHA Board.
SCAPE Civil Engineering Construction Framework	• The framework is available to local authorities and other public sector bodies. • SCAPE is an organisation originally set up by a group of Local Authorities in 2006 to deliver greater value for money in the procurement of major building works. They have since diversified in to other areas setting up national frameworks for services such as facilities management, project management, QS services and minor works. The SCAPE Group Ltd is still a local authority owned company. These frameworks are open to all public-sector bodies but are specifically tailored towards Local Government Authorities. • Framework is designed to deliver construction projects costing between £50k and £100m plus. • Framework free to Employers. • Nationally competitively tendered framework on fixed overheads, profit and preliminaries basis • Financial and time savings that are achieved by not having to carry out an OJEU procurement exercise.	• Framework based on a single source direct appointment (Balfour Beatty), i.e. no competitive tender. (The framework includes rates for 'preliminaries' costs with construction rates 'market tested'). • Potential that the value for money from the main construction contract may be impacted by awarding the contract to a single supplier. • Dependence on a single supplier and their associated supply chain. • Lack of competition when the design and build contract is let. • Fixed set of 'added value' offered from a single supplier. • Restricts evaluation of approaches achieved via OJEU tender. • Opportunity for added value and innovation is reduced.

Framework	Advantages	Disadvantages
	• Ability to leverage same advantages of ECI; however, with only one supplier (Balfour Beatty). • Sub contracted works packages are carried out via an open book process which allows the Client a level of scrutiny and control over who is appointed to carry out works packages.	
Cambridgeshire County Council's Highways Service Contract	• The delivery programme can be communicated to existing framework contractors (Skanska) and they can mobilise accordingly. • Economies of scale / efficiencies resulting from long-term understanding of local needs and policies. • The project maintains the current programme • Direct award on agreement of target cost thus increased efficiency in procurement process.	• There are limited incentives and opportunities for the Contractor to create efficiencies in delivery, thereby leading to limited cost savings for GCP. • Less direct control in relation to appointment of subcontractors and suppliers.

Source: Mott MacDonald

3.5.1 Preferred framework for appointment of contractors

These routes generally take significant time to do the necessary internal audit checks. In addition, on other regional frameworks it may not be possible to meet the criteria to join or make use of the framework in the scheme delivery timescales.

None of the framework contracts detailed above can be recommended for appointment of a contractor for delivery of C2C option for the following reasons:

- Estimated construction cost of C2C is greater than the maximum contract value applicable to the EHA framework, although it is possible that the scheme might be approved EHA Board.
- The SCAPE framework is based on a single source direct appointment and as such would not give rise to value for money on a commission of this scope.

3.6 Consultancy framework contracts

GCP may also wish to appoint a consultant, or consultants to provide them with design advice, undertake the role of project manager during construction of the scheme, act as technical approval authority, etc. leading up to and following appointment of a design and build contractor. Given this, several framework contracts currently available for the appointment of consultants have been considered. These options are set out in Table 15 alongside the advantages and disadvantages of each.

Table 15: Advantages and disadvantages of existing framework contracts for appointment of consultants

Framework	Advantages	Disadvantages
ESPO Consultancy Services Framework	• The ESPO framework is compliant with UK/EU procurement legislation. • The framework is not due to expire until 18/04/21. • GCP does not need to run a full EU procurement process. • The Service Providers on the framework have been assessed during the procurement process for their financial stability, track record, experience and technical & professional ability.	• GCP is restricted in the value of any direct award by their own financial standing orders when using the direct award approach. • Suppliers pay a levy of 1.0% of fees to ESPO to manage the framework. • Lack of competitive tension if direct award.

Framework	Advantages	Disadvantages
	• GCP and the Service Providers have pre-agreed terms & conditions. • ESPO framework tenders have been scored taking into account price and quality factors to determine the most economically advantageous bid. This gives Service Providers providing high quality services with an opportunity to be awarded a contract even though they may not be the lowest price. • GCP can award a professional services contract direct to a member of the ESPO framework with no limit on value. • GCP can create competition between suitable Framework service providers to create competitive tension via the use of a mini-competition. • GCP and the Service Provider are able to collaboratively negotiate project specific terms and conditions by the inclusion of replacement clauses. • GCP can create competition between suitable Framework service providers to create competitive tension. • The Lot structures and the ability to tailor further competitions will ensure this supports customers own delivery considerations such as SMEs and social value. • Maximum standard rates are fixed for the first two years of the framework and may be reduced further by suppliers in the pricing models through competitive rates and continuous improvement measures.	
Homes England Framework	• GCP can award a professional services contract direct to a member of the Homes England framework up to the value of £15k. • The Framework is not due to expire until February 2022. • Framework free to Employers. • 20 multi-disciplinary consultants on the approved supplier list. A prequalification process could be used to reduce the number of tenderers for mini-competitions. • GCP can create a mini-competition between suitable Framework service providers.	• GCP is restricted to £15k fee limit when using the direct award approach. • Lack of competitive tension if direct award.

Framework	Advantages	Disadvantages
	• The day rates for a Professional Services supplier are pre-agreed between GCP and the Services Provider. • GCP and the Service Provider are able to collaboratively negotiate project specific terms and conditions by the inclusion of replacement clauses.	
ConsultancyOne Framework	• The ESPO framework is compliant with UK/EU procurement legislation. • The Service Providers on the framework have been assessed during the procurement process for their financial stability, track record, experience and technical & professional ability. • GCP and the Service Provider are able to collaboratively negotiate project specific terms and conditions by the inclusion of replacement clauses. • GCP can create competition between suitable Framework service providers to create competitive tension.	• Large number of pre-approved organisations thus potential for substantial time loss at assessment stage.
Cambridgeshire County Council Professional Services Framework	• Bespoke Cambridgeshire County Council Framework • Covers surveys and professional services – for Peterborough and Cambridgeshire combined authority. Cambridgeshire and Peterborough Combined Authority • Framework procured through competitive process.	• Framework not yet in place - expected to be procured for Q2 2020.
Crown Commercial Services (CCS) Project Management and Full Design Team Services (PMFDTS) Framework	• The Framework is the recommended route for all central government departments and is available to local authorities and other public sector bodies. • The Framework is not due to expire until 02/05/21. • Framework free to GCP. • GCP can award a professional services contract direct to a member of the framework with no cap on fees. • GCP can create competition between suitable Framework service providers to create competitive tension. • The Lot structures and the ability to tailor further competitions will ensure this supports customers own delivery considerations such as SMEs and social value. • Maximum standard rates are fixed for the first two years of the framework and may be reduced	• Lack of competitive tension if direct award.

Framework	Advantages	Disadvantages
	further by suppliers in the pricing models through competitive rates and continuous improvement measures.	

Source: Mott MacDonald

3.6.1 Preferred framework for appointment of consultants

The preferred Framework for appointment of a Consultant for technical support remains to be determined however will likely either be:

- ESPO Consultancy Services Framework; or
- Cambridgeshire County Council Professional Services Framework

4 Contract and Payment Mechanisms

Payment mechanisms under UK construction contracts are governed by Part II of the Housing Grants, Construction and Regeneration Act 1996 and the Scheme for Construction Contracts (England and Wales) Regulations 1998. All the forms of contract considered for this scheme have mechanisms which comply with this legislation.

The payment mechanism used is to a large extent determined by the form of contract selected and the level of risk to be apportioned to the parties.

4.1 Form of contract

There are three forms of contract that have been widely used in the UK for major civil and highway engineering schemes over the last 20 years. These are commonly known as:

- Infrastructure Conditions of Contract (ICC);
- Joint Contracts Tribunal (JCT); and
- New Engineering Contract (NEC) published by the Institution of Civil Engineers.

These are detailed in the following sub-sections:

4.1.1 Infrastructure Conditions of Contract (ICC)

The ICC Conditions of Contract is a re-badged version of the Institution of Civil Engineers (ICE) 7th Edition Conditions of Contract which is sponsored by the Association of Consultancy and Engineering (ACE) and Civil Engineering and Contractors Association (CECA).

The ICE 7th edition has now been updated, ICC 2011 and is based on the traditional pattern of Employer designed works constructed by the Contractor and paid through re-measurement.

4.1.2 Joint Contracts Tribunal (JCT)

The JCT produces a range of contracts for construction, guidance notes and other standard documentation for use in the construction industry. The JCT contracts comprise a suite of mutually consistent contracts which enable them to be used together to include:

- Designer agreements;
- Main contracts between the Employer and the main Contractor;
- Sub-contracts between the main Contractor and its subcontractors. Includes for both sub-contractors selected by the Employer and for other sub-contractors;
- Standard forms of sub-sub-contract between a subcontractor and such sub-contractor's sub-sub-contractors;
- Design agreements between an Employer and a specialist designer;
- Forms of tender for issue by an Employer to prospective main Contractors and for issue by a main Contractor to prospective subcontractors and for issue by a subcontractor to prospective sub-sub-contractors;
- Form of contracts for the supply of goods; and,
- Forms of bond, including performance bonds and collateral warranties.

JCT contracts tend to be used for building contracts rather than civil engineering and highways contracts. However, some local authorities favour this suite of contracts due to a lack of in-house expertise in other forms of contract.

4.1.3 New Engineering Contract (NEC)

The NEC is a family of contracts that facilitates the implementation of sound project management principles and practices as well as defining legal relationships. It is suitable for procuring a diverse range of works, services and supply, spanning major framework projects through to minor works and purchasing of supplies and goods. The implementation of NEC contracts has resulted in major benefits for projects both nationally and internationally in terms of time, cost savings and improved quality.

The NEC was developed to offer an improvement on traditional forms of contracts. The strengths of the NEC can be summarised as following:

- Flexibility - the NEC Professional Services Contract (PSC) can be applied to a 'design only' contract. the NEC Engineering Construction Contract (ECC) can be applied to all engineering disciplines and includes the option for Contractor design with a variety of options for financial arrangements for arranging for payment to the Contractor.
- Clarity and simplicity - the NEC uses words that are commonly used. It reduces the number of clauses compared with other forms of contract. It uses shorter sentences and does not cross reference clauses.
- Stimulus to good management – the concept of the ECC is that its implementation contributes to the effective management of the Work. It promotes cooperative management of the interactions between the parties and can reduce the risks for all parties that are inherent in the work.
- Subcontracts – the ECC has been designed so that works can be sub-contracted and provides separate contracts for construction and design services.
- Nominated subcontractors – the ECC precludes nominated subcontractors to eliminate the clouding of responsibility that the process of nomination causes. This approach reduces disputes and strengthens the motivation for the parties to manage their activities.
- Financial Control – both the PSC and the ECC use the activity schedule or bill of quantities as a mechanism for payment to the Contractor for works done and cost certainty.

The NEC ECC form of contract has been recommended by the Office of Government and Commerce (OGC), the Cabinet Office UK and is Highways England's contract of choice on prestigious construction projects.

The relative advantages and disadvantages of the three forms of contract are summarised in Table 16.

Table 16: Comparison of forms of contract

Form of Contract	Advantages	Disadvantages
ICC	• Encourages co-operation between parties. • Contractor takes full responsibility for nominated sub-contractors.	• Lump sum terms can result in Contractors allowing for costs for risks that do not arise. • No Early Warnings - retrospective approach to risk mitigation.
JCT	• Potentially more familiar to Local Authority officers. • Ground risk rests with the Contractor. • Clear payment section. • Comprehensive detail regarding insurances.	• Emphasis on the obligations of the parties under the contract. • Programme – not a contractual document and updates of the initial programme are not mandatory. • Time and financial aspects of claims are dealt with separately. • No Early Warnings – retrospective approach to risk mitigation.

Form of Contract	Advantages	Disadvantages
		• Contractor only obliged to make a claim after the risk event has occurred. • No obligation to notify regarding defects. • Contractors may include costs for risks that do not arise due to risk transfer. • Tends to be used for building contracts rather than civil engineering and highways contracts.
NEC	• Clarity and simplicity – written in plain English. • Flexibility – adaptable to various forms of construction. • Stimulus to proactive management. • Encourages co-operation between parties. • The programme – a key contractual document which must be regularly updated. • Early Warnings – promotes proactive approach to problem resolution. • Obligation on both parties to notify each other regarding defects.	• Requires substantial administration with higher administration costs as a consequence. • Processes are prescriptive. • Significantly less case law to provide guidance in dispute resolution compared with other forms of contract. • Employer has a wider ownership of risk.

Source: Mott MacDonald

4.1.4 Preferred form of contract

The preferred form of contract for delivery of C2C is NEC for the following reasons:

- Recommended by the Office of Government and Commerce and written in plain English;
- Encourages co-operation between parties. (Other forms of contract more liable to create confrontation);
- Early Warning promote a proactive approach to risk resolution. (Other forms of contract do not include Early Warning);
- More flexibility than ICC, which only provides for payment through re-measurement; and,
- JCT contracts tend to be used for building contracts rather than civil engineering and highways contracts.

4.2 NEC ECC conditions of contract

The NEC ECC is packaged into six main options to suit the scope of works and appetite for risk between the Employer and Contractor. These are divided into two types, 'Priced' and 'Cost Reimbursable' type contracts with the payment mechanism based on activity schedule, Bill of Quantities (BoQ) or actual work undertaken.

In the Priced Options, traditionally known as lump sum or priced BoQ, the Contractor is paid for the works he has completed based on his tendered price. In the Cost option, the Contractor's costs are reimbursed with a fee percentage for overheads and profit for the works that he has completed. The Cost options are divided between Target Cost and Cost Reimbursable. The Target Cost options introduce a pain/gain mechanism which provides the Contractor with financial incentive/gain to complete the works for less than the Target Cost and dis-benefit/pain for completion over the Target Cost. Savings for underspend or costs of overspend are shared with the Employer.

The ethos of the ECC is to apportion the risk fairly between the Employer and the Contractor and this is reflected in each option which uses different arrangement for payment to the Contractor as the allocation of risk between the Employer and Contractor is different.

The incentives and main risks for the various Options of the NEC EEC Conditions of Contract are set out in Table 17.

Table 17: NEC EEC conditions of contract - Incentives and risks for GCP

NEC Option	Incentives	Financial Risk	Other Risks
Option A Priced Contract with Activity Schedule	Payment on completion of activities encourages progress. Contractor motivated to keep within his tendered price. Option suitable for 100% Contractor design.	Contractor under pressure to complete within the tendered price.	Completeness & accuracy of activity schedule is the Contractors risk. GCP would pay a premium for Contractor's risk.
Option B Priced Contract with BoQ	GCP would have responsibility for design and re-measuring the works for payment.	Contractor bears the risk on undertaking the works within the tendered priced rates. GCP would bear the risk if the BoQ is inaccurate. No incentive for the Contractor to produce an economic design.	Completeness & accuracy of BoQ would be GCP's risk.
Option C Target Cost with Activity Schedule	Shared financial pain/gain encourages collaborative working, early finish and control costs. Provides best value.	Shared between parties on pain/gain on late/early finish.	Completeness & accuracy of activity schedule is the Contractor's risk.
Option D Target Cost with BoQ	Shared financial pain/gain encourages collaborative working though open book accounting. GCP would have responsibility for design and re-measuring the works for payment.	Shared between parties on pain/gain on late/early finish. GCP would bear the risk on inaccurate BoQ. No incentive for the Contractor to produce an economic design.	Completeness & accuracy of BoQ would be GCP's risk.
Option E Cost Reimbursable Contract	GCP would have a quick start. Contractor incentivised on ECI by sharing savings on employer's budget by providing cost effective solution.	GCP	Project outturn cost uncertain.
Option F Management Contract	No real incentive.	GCP	Project outturn cost uncertain.

Source: Mott MacDonald

Options A and B place the main financial risks on the Contractor and the cost reimbursable Options E and F would place the main risks with GCP. These risks would be shared between the Contractor and GCP in the target cost Options C and D where the Contractor is incentivised to finish early.

- **Option A** can be used when GCP has a well-defined scope of works and the works can be influenced by buildability. Under this option, GCP would appoint the Contractor to 'Design and Build' the works within the tendered Price; this approach is particularly relevant where Design & Build and Price are the overriding factors for the Employer.
- **Option B** can be used when the GCP has well-defined scope of works and wants full control over the design. GCP would appoint the Contractor to price the works for construction only based on the GCP's scheme design.

- **Option C** can be used when GCP has adequately defined the scope of works and wants to further develop it through design before construction. GCP would appoint the Contractor on a Design and Build arrangement and manage the cost through pain/gain incentive on the target cost with open book accounting. This option would give GCP an element of control over design and the open book accounting on cost.
- **Option D** should be used when GCP has adequately defined the scope of works and wants to further develop it through its own designer. GCP would appoint the Contractor to construct only but would incentivise through pain/gain share on the target cost through open book accounting. The Option D procurement route is not recommended given that the accuracy of the BoQ would be GCP's risk, and the Contractor has no incentive to produce an economic design.
- **Option E** should be used if GCP only had a loosely defined scope of the works and wanted the Contractor to develop it without delay. In this scenario GCP would be uncertain of the project outturn cost but would be prepared to appoint a contractor on a Design and Build arrangement and manage the cost through open book accounting with incentive on sharing the savings on GCP's Budget. This option is not appropriate given that there will be a well-defined scope of works for the preferred Yellow option.
- **Option F** should be used when the project is complex requiring several specialists and the GCP has a well-defined scope of the works. Under this scenario GCP would appoint the Contractor to manage the specialists through separate sub-contracts.

Main (payment) Options

	activity schedule	*bill of quantities*	reimbursable
priced contract	**A**	**B**	
target contract	**C**	**D**	
cost reimbursable			**E**
management contract			**F**

One of the advantages of the NEC suite of construction contracts is the flexibility the contracts provide to users. This is particularly so when it comes to payment arrangements where, in each of its main forms of contract (not the 'short' contract) the NEC provides options for how payment is to be made.

Table 18: Advantages and disadvantages of main payment options

ECC Option	Advantages	Disadvantages	Potential Suitability
A	• Simplicity of payment assessment and forecasting of cashflow. • Clarity of passing of financial risk to contractor. • Simple to pass down financial risk to smaller subcontractors familiar with priced contracts. • Direct link between activity schedule and programme	• No direct commercial incentive for Project Manager (on behalf of Employer) to collaborate – any saving or overspend compared with total of the Prices is taken by the Contractor only. • No commercial incentive for contractor to suggest changes to Employer's Works Information (this can be added). • No openness of contractor's costs required. • Assessment of the cost of compensation events uses a model of cost that is not in use for regular payment assessment and so is less familiar to those using it. • In assessment of compensation events, a subcontractor's fee is not included in the contractor's actual cost. The tenderer therefore has to make an allowance in his own fee percentage for possible subcontractor's fees for possible work under compensation events. (This can be modified).	• Will be paying a premium for passing the financial risk to the Contractor however this is mitigated by the cost savings in not having to pay for production of a BoQs. Also, the risk and thus cost of any measurement inaccuracies, sits with the Contractor. Further, contract administration is simpler and not having to undertake monthly measurements of progress, reduces waste. • Provides the greatest level of cost certainty to the Employer.
B	• Allows Employer, if appropriate, to take the risk of accuracy in tender quantities eg where he has been responsible for the preparation of bills of quantities and the (outline) design leading to them. • Similar payment mechanism to 'traditional' measure and value contracts (eg ICE 5th, 6th, 7th) (although this is now much less of an advantage as use of the NEC ECC increases compared with that of traditional forms). • Allows use of bill rates to be used for rapid assessment of compensation events but only when agreed by both Project Manager and Contractor: the default, like all other ECC main options is to consider the effect of the compensation event on Defined Cost plus Fee).	• Requires monthly 'measurement' of progress of the works that is clearly not a 'value adding' activity. • Requires an 'activity schedule' of sorts linked with programme to generate a predicted cash flow, even though the activity schedule is not required for payment. • Requires an appropriately detailed method of measurement that can be a cause of misunderstanding and or disagreement. (The Employer takes the risk of all errors in the BoQ). • Unlikely to be appropriate if Contractor is responsible for the design and so for the quantities required. • Assessment of the cost of compensation events uses a	• Producing a detailed BoQ would add time to the programme. • Less incentive to improve performance and employer does not benefit. • Contractor shall be responsible for the design.

ECC Option	Advantages	Disadvantages	Potential Suitability
		model of cost (Defined Cost + Fee) that is not in use for regular payment assessment and so is less familiar to those using it. • Similar payment mechanism to 'traditional' measure and value contracts can lead to users not paying the required attention to the many features of the NEC ECC that are completely different.	
C	• Direct commercial incentive to collaborate for Project Manager (on behalf of Employer) and Contractor – any saving or overspend compared with total of the Prices – the project target - is shared and so all 'Contractor risks' are really 'project risks' and the Project Manager has a direct commercial incentive to help manage them. • Visibility of Defined Cost to all. • Complete flexibility in selection of share ranges and share percentages to develop an appropriate commercial incentive structure. In the extreme this is from 0% share (effectively reimbursable) to 100% share (effectively lump sum). • Requirement to present (or collaboratively develop) target cost encourages openness relating to resource planning and risk allocation and pricing. (Particularly appropriate if Contractor is part of integrated team developing design and target). • Assessment of the cost of compensation events uses a model of cost that is in use for regular payment assessment and so is familiar to those using it. • Can be adapted to support a procurement strategy allowing target costs for successive sections of work to be developed through the contract. • Can be adapted to include Employer's own costs in overall project target.	• No direct linkage between activity schedule and programme. • Cashflow is less certain than with e.g. Option A (although a modification can be made to pay according to a predetermined cashflow and correct according to actual costs). • Assessment and audit of 'Defined Cost costs' is time-consuming (although it is possible to use the contractor's own 'model' of cost rather than the ECC's 'Schedule of Cost Components'). • Systems for monitoring Disallowed Cost must be set up from the start. Drafting issues: • The definition of Defined Cost requires a forecast of what will be due to paid (to Subcontractors and directly by the Contractor) at the next assessment date. • Definitions within 'Disallowed Cost' are subject to interpretation and have caused disagreements (These can and should be reviewed in tender documents). • Timing of payment of the Contractor's share is unacceptable to some employers (This can and should be modified).	• As noted in the NEC3 Guidance Notes, target cost contracts can be useful where the extent of the work to be done is not fully defined or where the risks anticipated are, for some reason, greater than usual. The financial risks are shared between the employer and the Contractor in a way which is meant to ensure that the Contractor is motivated to carry out the works as cost efficiently as possible. • The separation of target and actual costs before completion creates the potential for loss of control in predicting the final cost to the employer. Thus, there is less certainty for the employer under target cost arrangements about what the actual final cost will be. • The nature of the target cost contract is such that the employer also shares in the Contractor's risk. • Requires best practice in project administration and a suitably skilled project manager. • Disputes and adversarial behaviours can occur when the employer scrutinises the contractor's cost records to ensure they are valid. • It would provide the contractor with an incentive to improve performance.
	• Allows Employer, if appropriate, to take the risk of accuracy in tender quantities where he has been responsible for the	• As for Option C and • Requires remeasurement of the works that is clearly not a 'value adding' activity – in	• As noted in the NEC3 Guidance Notes, target cost contracts can be useful where the extent of the work to be

ECC Option	Advantages	Disadvantages	Potential Suitability
D	preparation of bills of quantities and the (outline) design leading to them. • Visibility of Defined Cost to all. • Allows use of bill rates to be used for rapid assessment of compensation events but only when agreed by both Project Manager and Contractor: the default, like all other ECC main options is to consider the effect of the compensation event on 'Defined Cost plus Fee). Direct commercial incentive to collaborate for Project Manager (on behalf of Employer) and Contractor– any saving or overspend compared with total of the Prices – the project target is shared. • Complete flexibility in selection of share ranges and share percentages to develop an appropriate commercial incentive structure. In the extreme this is from 0% share (effectively reimbursable) to 100% share (effectively lump sum). • Requirement to present (or collaboratively develop) target cost encourages openness relating to resource planning and risk allocation and pricing. (Particularly appropriate if Contractor is part of integrated team developing design and target). • Assessment of the cost of compensation events uses a model of cost that is in use for regular payment assessment and so is familiar to those using it. • Can be adapted to include Employer's own costs in overall project target.	addition to assessment of actual costs • Requires an appropriately detailed method of measurement that can be a cause of misunderstanding and or disagreement. • Unlikely to be appropriate if Contractor is responsible for the design and so for the quantities required.	done is not fully defined or where the risks anticipated are, for some reason, greater than usual. The financial risks are shared between the Employer and the Contractor in a way which is meant to ensure that the Contractor is motivated to carry out the works as cost efficiently as possible. • The separation of target and actual costs before completion creates the potential for loss of control in predicting the final cost to the employer. Thus, there is less certainty for the employer under target cost arrangements about what the actual final cost will be. The nature of the target cost contract is such that the employer also shares in the Contractor's risk, which may be seen as undesirable in this instance. • Requires best practice in project administration and a suitably skilled project manager. • Disputes and adversarial behaviours can occur when the employer scrutinises the contractor's cost records to ensure they are valid. • It would provide the contractor with an incentive to improve performance.
E	• Appropriate when time or quality are valued more highly than cost by the Employer – e.g. in emergency or R&D works or where scope can not be defined well enough to make setting a target useful. • Allows Contractor's team to be considered (and paid for) as an extension to that of the Employer. (Although contractor may still take on various liabilities).	• No direct incentive for Contractor to control costs. (Although other appropriate incentives can be included based on performance against pre-determined performance targets (e.g. using option X20). • Assessment of 'actual costs' can be time-consuming (although it is now common practice to use the contractor's own 'model' of cost rather than the ECC's 'Schedule of Cost Components')	• More suited to emergency works or where the scope is not well defined. This is not the case in this instance.

ECC Option	Advantages	Disadvantages	Potential Suitability
		• Drafting issues as option C (except comment re Contractor's Share).	
F	• Provides Employer with a contractor with single point responsibility for project delivery even though Employer pays all subcontract costs plus the management contractor's submitted fee percentage. • Makes it easier (than other options) for Employer to contribute to subcontract procurement strategy and subcontractor selection post award of contract.	• No specific option for target cost mechanism – although contract could require some or all subcontracts to be under a target option. Works Information must be very clear regarding: • Work which the Contractor is required to sub-contract. • Work which the contractor must not sub-contract – which, along with all either costs and any work which the Contractor chooses to sub-contract must be covered by Contractor's submitted prices. Also: • If, post-contract, the Contractor wanted to change these restrictions on sub-contracting, Project Manager might choose to do so but changes to method of payment would have to be in separate post-contract agreement. • Contract has no mechanism to value change in the Works Information concerning work not sub-contracted as the Schedule of Cost Components is not included.	• Required where the Employer wishes to specify work which is required to be subcontracted and not. This is not the case in this instance.

Source: Mott MacDonald

4.2.1 Assessment of compensation events

Under each option assessment of the financial impact of a compensation event is made by reference to the impact on Defined Cost and the resulting Fee. Changes to the Prices are assessed as the impact of the compensation event on the actual Defined Cost for work that has been done, the forecast Defined Cost of work not yet done and the resulting Fee.

Table 19: Assessment of compensation events

Payment Option	Price for Work Done to Date	Defined Cost and Schedule of Cost Components
Option A	The total of the lump sum prices in the activity schedule for each group of completed activities and each completed activity not in a group.	Relevant to assessment of compensation events only. Shorter Schedule of Cost Components.
Option B	The quantity of work which the Contractor has completed for each item in the Bill of Quantities multiplied by the relevant rate and a proportion of any lump sum item in the Bill of Quantities to the extent that the lump sum item has been completed.	Relevant to assessment of compensation events only. Shorter Schedule of Cost Components.

Payment Option	Price for Work Done to Date	Defined Cost and Schedule of Cost Components
Options C, D and E	The total Defined Cost which the Project Manager forecasts will have been paid by the Contractor before the next assessment date plus the Fee	Applicable to both Price for Work Done to Date and assessment of compensation events. Defined Cost based on the (main) Schedule of Cost Components unless agreed between the parties to use Shorter Schedule of Cost Components for compensation events only.
Option F	The total Defined Cost which the Project Manager forecasts will have been paid by the Contractor before the next assessment date plus the Fee.	No Schedule of Cost Components. Defined Cost is the amount of payments due to Subcontractors for work which is subcontracted and the prices for work done by the Contractor directly, less Disallowed Cost.

Source: Mott MacDonald

It is important to note that in Options C, D, E and F the Defined Cost is the cost that will be incurred before the next assessment date, as forecast by the Project Manager. This keeps the Contractor in a cash neutral position because he is paid in advance what is forecast to be incurred, rather than what has actually been incurred.

4.2.2 Preferred payment mechanism

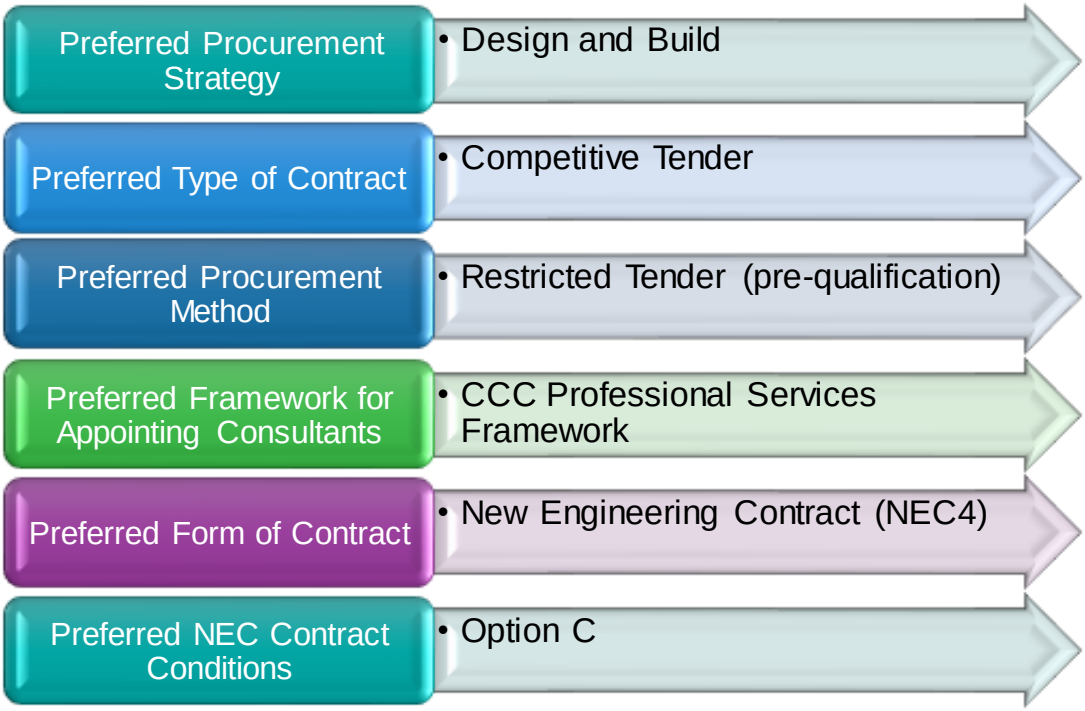
On the basis of the above, the emerging preferred payment mechanism for appointing a Contractor to deliver C2C is NEC ECC Conditions of Contract Option C. This is for the following reasons:

- Direct commercial incentive to collaborate for Project Manager *(*on behalf of *Employer)* and *Contractor* – any saving or overspend compared with total of the Prices - the project target - is shared and so all 'Contractor risks' are really 'project risks' and the Project Manager has a direct commercial incentive to help manage them.
- Visibility of Defined Cost to all.
- Complete flexibility in selection of share ranges and share percentages to develop an appropriate commercial incentive structure. In the extreme this is from 0% share (effectively reimbursable) to 100% share (effectively lump sum).
- Requirement to present (or collaboratively develop) target cost encourages openness relating to resource planning and risk allocation and pricing. (Particularly appropriate if Contractor is part of integrated team developing design and target).
- Assessment of the cost of compensation events uses a model of cost that is in use for regular payment assessment and so is familiar to those using it.
- Can be adapted to support a procurement strategy allowing target costs for successive sections of work to be developed through the contract.
- Can be adapted to include Employer's own costs in overall project target.

4.3 Preferred procurement route summary

The emerging preferred 'procurement options' are summarised in Figure 2.

Figure 2: Preferred procurement route summary



Source: Mott MacDonald

5 Pricing Framework and Charging Mechanisms

5.1 Prices

The ECC uses the term Prices, which has a different meaning in each of the options, and is analogous to a contract sum in other contract forms:

- In Options A and C – Prices means each of the lump sum prices against each of the activities in the activity schedule. In Option A the total of the Prices is therefore, in effect, the contract sum. In Option C the total of the Prices is the target price for the purposes of the pain/gain share mechanism.
- In Options B and D – Prices means the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the bill of quantities. Again, in Option B the total of the Prices is in effect the contract sum. In Option D the Total of the Prices is the target price for the purposes of the pain/gain share mechanism.

5.2 Payment process

Under each of the ECC payment options the Contractor is entitled to interim payments which are certified by the *Project Manager* at each assessment date. The assessment dates are identified by the parties in the contract. The first assessment date is chosen by the Project Manager. The *assessment interval* for subsequent payments is set in the contract.

The Project Manager certifies the 'amount due' at each assessment date. The first certified payment is the amount due and subsequent payments are changes in the amount due from the previous certification. Certification is therefore based on the cumulative assessment less sums previously certified.

The amount due is the Price for Work Done to Date (the calculation of which varies between options as identified below) plus other amounts due less other amount due to be paid by or retained from the *Contractor.*

5.3 Pricing documents

Option C relies on a pricing document, the activity schedule. The activity schedule is a list of activities with priced amounts against each activity. The Contractor prices a lump sum for each activity that it identifies it needs to undertake in order to complete the works in accordance with the Scope. It is not necessary for the Employer to provide quantities and the Contractor takes the quantity risk.

In principle, it is for the Contractor to identify how it intends to deliver the works and therefore to identify the activities that it considers necessary. In practise, however, the Employer is likely to want to specify at least a structure for the activities to create some consistency during the tender process.

It is important that the activities are clear and distinct so that the parties know when they are completed.

Option C uses an activity schedule, but it is used differently to that in Option A. In Option C, the Contractor is paid its actual expenditure on the project. The activity schedule is used only to record

and track changes to the Prices, and for the purposes of calculating the Contractor's share at the end of the project. It has no effect on routine payment.

5.4 Defined cost plus fee

In the cost-based Options, (C, D, E and F) the 'Price for Work Done to Date' is based on 'Defined Cost' plus Fee. In Options A and B, 'Defined Cost' plus Fee is only relevant to the assessment of the cost consequences of a compensation event.

Across each of the contracts the Fee is calculated by the application of an agreed percentage against Defined Cost. The fee percentage needs to cover:

- All costs of the Contractor not covered by Defined Cost;
- Disallowed Cost; and
- The Contractor's profit.

Under ECC3, the parties agree two separate fee percentages: one for subcontracted work; and one for other work. This reflects the possibility that the risk and profit for (and the work required in managing) direct work as against subcontracted work may well be different. Often the percentages are agreed at the same figure, but if there is a difference, the percentage for sub-contracted work is likely to be higher. Under ECC4 however, there is just a single fee percentage applied to all Defined Cost.

5.5 Defined cost and the schedule of cost components

In Option C, Defined Cost is the principal constituent of the Contractor's payment for work done (the "cost" in the cost plus contract). In Options A and B Defined Cost is used only in the assessment of compensation events.

In Option C, Defined Cost of subcontracted work is the amount of payments due to the Contractor's Subcontractors. This highlights the need for the Project Manager to be aware of the terms of the subcontracts and to operate the subcontract approval processes under the ECC.

For the Contractor's own costs, Defined Cost is established by reference to the 'Schedule of Cost Components' within the ECC. In ECC3, depending upon the pricing option selected, there may be two Schedules of Cost Components, the standard Schedule and the Shorter Schedule of Cost Components.

Under Option C the Schedule of Cost Components is used for assessing the Price for Work Done to Date. The Shorter Schedule of Cost Components may be used instead for assessing compensation events if both the Project Manager and the Contractor agree.

Both schedules define categories of cost that the Contractor may recover. These include costs for people, equipment, plant and materials, charges, manufacture and fabrication, design and insurance. (In ECC4 the cost of Subcontractors has been included in the Schedules.)

The significance of the Schedules of Cost Components, and the manner in which Defined Cost is established needs to be understood. They identify a specific level of detail that needs to be established. Some costs are very close to 'real' costs. For example, in respect of people costs the Contractor will be required to provide details of how its people costs are built up, including salaries, bonuses, any incentives, any allowances, details of absence due to sickness and holidays, subsistence and lodging, medical examinations, travel insurances, pensions and life

assurances. Certain costs are not paid directly but are instead based on rates and percentages tendered by the Contractor in Contract Data part two.

It is essential that the Contractor recognises the need to maintain the relevant records to justify all of its costs. It is also necessary for the Project Manager to have appropriate resources to be able to properly analyse, audit and deal with the detail in the applications by the Contractor when received.

The Contractor and Project Manager need to establish a process and the nature of records required early in the contract to ensure that the mechanism can work. For Option C this will become apparent on day one, or at the first assessment date, when the Price for Work Done to Date is calculated.

5.6 Disallowed costs

Under Options C, the Employer is entitled to deduct Disallowed Cost from what would otherwise be Defined Cost.

Disallowed Cost is a cost which the Project Manager decides falls within the categories of Disallowed Cost in the contract. These include, for example, cost not justified by accounts and records, cost that should not have been paid in accordance with the terms of the Contractor's subcontracts, cost incurred in preparation for and conduct of dispute proceedings and the cost of plant and materials not used to provide the works.

5.7 Option C: pain/gain share mechanism

As noted above, under Options C, the total of the Prices is the 'target price', as part of the Contractor's share mechanism (commonly referred to as painshare/gainshare).

The pain/gain share is assessed by reference to the difference at Completion of the whole of the works between the total of the Prices (as impacted by compensation events) and the Price for Work Done to Date.

The assessment is first made at completion based on a forecast of the two figures. The ECC provides for a final assessment once the final figures are known.

The ECC provides flexibility around how the share works. It is for the Employer to specify at tender stage what the share percentages under the contract are to be. At its most simple, whatever proportion of the Price for Work Done to Date exceeds the total of the Prices is shared in agreed percentages between the parties, and likewise in respect of any savings below the total of the Prices. The ECC allows greater sophistication by allowing for different share percentages to be agreed for 'share ranges'. The key from the Employer's perspective is to motivate performance and to encourage the Contractor to deliver a Price for Work Done to Date which is less than the target total of the Prices.

There is no interim assessment, in advance of Completion, of what the difference between the total of the Prices and the Price for Work, and so the Contractor's share is going to be. That can mean that an Employer may find that at completion of the works the Price for Work Done to Date exceeds the total of the Prices, such that the Employer needs to seek recovery of any Contractor's share. This issue often leads Employers to modify the clause to allow it to retain a forecast of the Contractor's pain.

5.7.1 Pricing framework and charging mechanisms

With regard to the pricing and charging of fares for the service, there are a number of options available, according to the level of risk and responsibility that the Employer wishes to retain or pass over to the service operator and whether, for example, franchising of the service is attractive.

6 Risk Allocation and Transfer

This section sets out how the type of risk that is shared amongst relevant parties for C2C. At this stage in the development of the project, prior to any procurement process, all liabilities and risks rest with GCP. It should be noted that although GCP may obtain a lower tender price by accepting a higher degree of risk, this is not guaranteed to result in a lower out-turn cost.

The preferred option, design and build, provides the lowest risk option and most of the commercial risk is transferred to the contractor. However, it is likely that this will result in a higher tender price as tenderers will allocate financial value to the risks that they are asked to accept.

At a project level, risks will be managed by the Project Board. The procurement strategy will seek to place risk with the party best placed to manage or mitigate that risk, or manage the consequences should they transpire. An aim is that risk is appropriately proportioned through the careful management of relationships within and throughout the project.

Design risk will be retained by the contractor. Delivery and programme risk will be shared and incentivised through the Option C pain/gain mechanism as part of the construction contract. The risk of costs being higher than currently predicted remains until the tendering process is complete, which is the point that this risk can be shared and incentivised through the pain/gain mechanism under NEC Option C.

The key risks identified in the risk register that are relevant to the Commercial Case have been summarised in Table 20 below.

Table 20: Key risks identified in the risk register relevant to the Commercial Case

Risk	Risk Event	Consequence	Mitigation
Construction programme risk	The construction of the physical assets are not completed on time or to specification.	The asset delivered is either late or not of sufficient quality leading to delays whilst issues are rectified. Negative impact on achieving scheme benefits and loss of reputation for GCP	Set in place robust reporting and monitoring process during construction phases. Draft construction contract with appropriate share of programme risk. Appoint Supervisor and Project Manager to monitor quality and progress
Lack of interest in scheme from suitable contractors		Unable to deliver competitive procurement	Early contractor involvement to encourage participation. Liaise with TfGM for recent experience on Leigh guided busway
Procurement risk	Procurement may not be successful or is delayed	Delivery of the project cannot progress without a contractor in place. Scheme progression is delayed	
Cost risk	The scheme escalates in cost e.g. cost of materials and infrastructure	C2C client team required to investigate the provision of additional funds internally or via alternative sources. C2C required to cancel the scheme or agree to additional borrowing	Ensure periodic cost reviews are held and ensure that value engineering is undertaken at key stages of the project

Provider risk	Sub-standard contractor performance	Scheme experiences delays during detailed design or construction due to inadequate performance or management of the D&B Contractor	Ensure that decision making members are well briefed on the reasons for the scheme and any opposition members are kept appropriately informed of the reasons and justifications for the scheme

Source: Mott MacDonald

6.1 Risk allocation and transfer

The emerging preferred option, Option C – Target Cost Contract with Activity Schedule, allows GCP to share the risk. At contract award, the design and build contractor will be assigned risks that encompass design, appropriate planning conditions, estimations of the quantities, mitigation measures and resources. GCP will continue to take responsibility for risks that encompass land, residual planning and environmental permissions. However, the risks on cost overruns are shared with GCP due to the pain-share mechanism. The key to successful risk management is to allocate risk to that party which is best placed to manage it.

The ownership and management of risks will be distributed to appropriate work package leads with a requirement to report and escalate to the Project Manager as necessary. At contract award, the design and build contractor will be assigned risks that encompass design, appropriate planning conditions, estimations of the quantities, mitigation measures and resources of the C2C project. GCP shall continue to take responsibility for risks that encompass land, residual planning and environmental permission. Included is the responsibilities of preparing Compulsory Purchase Order and attending Public Inquiry.

7 Contract Length

It is recommended that a tender period of 12-16 weeks is included within the procurement programme for the Design and Build Contract given that contractors will have to undertake design development work during the tender period to support their submission.

It is anticipated the C2C project may procure services using several types of contract at different future stages of the project. Table 21 shows those possible contracts which could be used within the project, plus an estimate of use during the relevant stage and the approximate length of time each contract will be used.

Table 21: Proposed contracts for use on C2C project

Contract Type	Stage	Length
Restricted procedure, OJEU, Public Contracts Regulations (NEC4 Option C)	Construction (Infrastructure)	20 months
CCC Professional Services Framework	Design and Construction (Infrastructure)	23 months
	Maintenance	TBC

Source: Mott MacDonald

Note: Dates subject to amendment within the FBC.

8 Contract Management

8.1 Contract management

At this stage of scheme development (OBC), the construction contract is proposed to be a NEC4 (Option C) Contract. The NEC suite of contracts are well understood and are a tried and tested set of contracts used on large scale construction schemes. In addition, the implementation of NEC contracts has resulted in major benefits for projects both nationally and internationally in terms of time, cost savings and improved quality. NEC contracts have been uniquely designed using the following three key unique characteristics:

- Proven contract arrangement with many projects successfully being delivered in terms of time, cost savings and improved quality;
- NEC contracts facilitated a good working relationship between the two parties and enable good management of the project; and,
- NEC contracts can be utilised in various commercial situations.

The recent update to the NEC4 suite of contracts from NEC3 reflects procurement and project management developments and emerging best practice, with improvements in flexibility, clarity and the ease of administration.

An NEC4 Project Manager and Supervisor shall be appointed to undertake the following during construction of the scheme:

The NEC Project Manager & Supervisor construction phase roles will be:

- Coordination and liaison with the main works contractor and their design partners and provision of any support and background information required;
- Establishment of procedures and protocols for the management and review of the ongoing site work and the administration of the contract;
- Provision of a permanent site presence to manage the NEC4 contract communications, (RFIs, Early Warnings and Compensation Events etc.);
- Maintenance of site records (including photographic record);
- Liaison with the Contractor and his designer to monitor that the construction works are being executed generally in accordance with the contract documents and with good engineering practice;
- Liaison with key stakeholders including adjacent landowners throughout construction; and,
- Assessment and report on payment certificates and compensation events.

In addition, the Project Management team would:

- Liaise with and advise GCP on current contractual, commercial, programme and risk activities;
- Represent the GCP as required at meetings and be a core member of the management team;
- Liaise with and advise on changes or additions to the contract, current contractual, commercial, programme and risk activities;
- Manage the supervisor's site and office teams; and,
- Ensure that Health & Safety legal and site-specific requirements for safe operating and duty of care are implemented throughout.

8.1.1 Design

During the design period, the contract management team will work closely with the Contractor and their designer to identify design issues and develop mitigation strategies. The design will also be monitored as it is developed to identify any aspects which may impact the cost of the project and keep the scheme promoter fully advised of any changes, as well as their impact.

If appointed, the contract management team would remain available to provide technical assistance and review throughout the design process. Review and comment on the completed design will be provided to ensure that the Contractor has a robust design and specification that is compliant with the Scope. Design statements and design risk assessments will also be reviewed to confirm that the design can be implemented safely. Regular meetings will also be convened with the Contractor's designer to ensure that the requirements within the Scope are being delivered.

8.1.2 Construction

During the construction period, the contract management team will administer the contract, ensuring compliance and effectively managing risk and programme. The key responsibilities of the contract management team during the administration of the contract are:

- Issuing all instructions, notifications and communications under the contract;
- Discharging all financial commitments under the contract, including monitoring the measurement of the works and certifying payments;
- Monitoring and reporting on Early Warnings and Compensation Events as well as the Project Risk Register;
- Monitoring the works for compliance with the Scope and Specification, including the identification of non-conforming elements if required; and,
- Review and comment on Contractor's construction methodology, programme, method statements, inspection and test plans and risk assessments.

8.1.3 Defects period

Following completion of the works, there will be continued monitoring of any outstanding defects, which will be managed in order to rectify them before any final agreement is reached on the final account. The Defects Certificate, defining the end of the defects liability period will be issued upon completion of the Contractor As-Built Records and Health and Safety File.

8.1.4 Project governance, roles and responsibilities

GCP has effective management and governance arrangements in place to ensure effective delivery of projects, including an established project management toolkit (summarised in the Management Case). The C2C project shall also undertake the Infrastructure and Project Authority's Project Initiation Routemap and follow its approach. Capable delivery via the utilisation of best practice in project management shall maintain a focus on delivery, programme, cost and quality. Further, governance arrangements are to be put in place, these are outlined within the Management Case.

The C2C project delivery team structure is shown in Figure 3 below.

Figure 3: C2C delivery team structure

Source: GCP

This adopts an integrated team approach without unnecessary duplication of functions between client and supplier. Thus, some of the workstream manager roles would therefore be filled by the supply chain and the workstream managers together with the cost manager/PMO would form the project management team. Operations would include technology, agreements with operators, asset management and handover into operation.

8.2 Human Resources

GCP will be responsible for oversight of the project on the client side of the delivery arrangement. The relevant professional activities to appropriately resource this aspect (procurement and delivery) of the project include a Project Manager who will oversee day to day management of each of the work stream leads as well as providing liaison between GCP, technical and design consultants, and contractors that will be appointed in line with the process and recommendations outlined earlier.

There are no trade union or TUPE implications arising from this contract.

9 Commercial Case Summary

- A number of procurement strategies, methods, frameworks and contract types have been considered for the C2C project and the advantages and disadvantages of each evaluated to arrive at an emerging preferred procurement route for delivery of the scheme.
- The emerging preferred procurement strategy at this stage (OBC) in the development of C2C is the appointment of a contractor under a design and build contract. As GCP would enter into a single contract relationship, there would be early collaboration between the contractor and designer. Further, it is also the most cost-effective procurement method.
- It is recommended that any consultancy services are directly awarded under the dedicated CCC Project Management and Services Framework.
- It is recommended that NEC4 is adopted for delivery as it is recommended by the Cabinet Office, encourages co-operation between parties and has an 'Early Warning' feature to promote a proactive approach to risk resolution. The recommended preferred contract conditions at this stage are a Target Cost Contract with Activity Schedule as the financial risks are shared between by the employer and the contractor in a way which should ensure the contractor is motivated to carry out the works as cost efficiently as possible. Further, payment on completion of activities encourages progress.
- It is recommended that an NEC Project Manager and Supervisor are appointed, with their main roles focused on coordination and liaison with the works main contractor and design partners, establishment of procedures and protocols, provision of a permanent site presence to manage the NEC4 contract communications and maintenance of site records. Liaison with key stakeholders including landowners alongside GCP should also be considered as a key role.

mottmac.com