



# **Cambridge South East Transport Phase 2**

Outline Business Case  
Appendix L: Risk Register

15 May 2020



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# 1 Risk Rating Descriptions

## Risk Likelihood Ratings:

Description	Descriptor	Scale
May only occur in exceptional circumstances, highly unlikely	Very Low	1
Is unlikely to occur in normal circumstances, but could occur at some time	Low	2
Likely to occur in some circumstances or at some time	Moderate	3
Is likely to occur at some time in normal circumstances	High	4
Is highly likely to occur at some time in normal circumstances	Very High	5

## Risk Impact Ratings:

Description	Descriptor	Scale
Insignificant disruption to internal business or corporate objectives Little or no loss of front line service No environmental impact No reputational impact Low financial loss (proportionate to budget involved)	Negligible	1
Minor disruption to internal business or corporate objectives Minor disruption to front line service Minor environmental impact Minor reputational impact Moderate financial loss (proportionate to budget involved)	Marginal	2
Noticeable disruption to internal business and corporate objectives Moderate direct effect on front line services Moderate damage to environment Extensive reputational impact due to press coverage Regulatory criticism High financial impact (proportionate to budget involved)	Significant	3
Major disruption to corporate objectives or front line services High reputational impact – national press and TV coverage Major detriment to environment Minor regulatory enforcement Major financial impact (proportionate to budget involved)	Critical	4
Critical long term disruption to corporate objectives and front line services Critical reputational impact Regulatory intervention by Central Govt. Significant damage to environment Huge financial impact (proportionate to budget involved)	Catastrophic	5

## 2 Risk Register



## Cambridge South East Transport Phase 2 Risk Register

Risk ID#	Risk Category	Project Stage	Title	Risk Cause	Risk Event	Impact	Risk Owner	Risk Status	Inherent Risk Rating			Mitigation	Residual Risk Rating			Mitigation Action	Mitigation Action Owner
1	City Deal Governance	KD 2-4	Route options not acceptable to GCP	The GCP Executive Board endorsed the shortlist on 27 June 2019, and approved public consultation on these options. Insufficient evidence is available to justify the selection of a preferred solution.	Preferred route and travel hub site is not acceptable to GCP at the meeting in June 2020.	Extensive rework to identify further options, or develop the preferred option, to a stage where they can be presented to GCP. Additional costs and delay to the scheme incurred.	GCP PM	OPEN	2	3	6	Treat	1	3	3	Early review of recommended preferred options with Members and Executive Board to identify any concerns and consider alternatives that meet the client's political constraints and requirements.	GCP
3	External Stakeholders	KD 2-4	Preferred route not acceptable to Public	Public opinion that may influence the choice of route has not been available.	Preferred Option is not supported by the public.	Extensive rework to identify further options and develop to a stage where they can be presented to the public	GCP PM	OPEN	1	2	2	Treat	1	2	2	Early review of preferred option through public engagement with the LLF and key landowners, to identify any issues that may affect public reception of proposals.	GCP PM
5	City Deal Governance	KD 2-5	Lack of ongoing support through changes in political control and priorities.	Future political changes may affect support for the scheme. Local and national elections may replace current politicians with politicians who have different priorities.	National or local politics affect support for this scheme. Political support for the scheme is reduced or withdrawn.	Support may be withdrawn, or the continuation of the scheme may be conditional on a review, which would incur delay and additional cost preparing business justification for the review.	GCP PM	OPEN	1	4	4	Escalate	1	4	4	Regular engagement will take place with council members of all parties, including leading members of opposition parties, to secure the support of all political groups. In the event of a change of political control, the promoters will immediately meet with the new ruling group and accommodate their concerns as far as possible.  Engagement with the CAM team to agree parameters and standards, to support the business cases for GCP projects and CAM.	Executive Board
6	Statutory Process	KD 2-5	Challenge on procedural grounds	Procedure for scheme submission has requirements that affect consultation, form of application and documents to be submitted.	Selected approach is successfully challenged by opponents, leading to a JR.	Responding to a legal challenge incurs additional time and cost, delaying the start of the scheme and its final delivery.	GCP PM	OPEN	3	5	15	Treat	1	5	5	Capture every product required legally in the programme plan for the next stage.  Create plan and programme for next stage of the project to prepare and deliver the TWA0 submission, following completion of the governance process to select a preferred option.  Ensure that all statutory procedures are followed to ensure that there is no scope for a judicial review - use of GCP legal advisors.  Identify potential vectors for challenge and review actions required to achieve compliance in these areas.	GCP
7	Consultation/Comms	KD 2-4	Stance taken by local media	Planned consultation and stakeholder management activities and project reports to Joint Assembly and Board provide scheme details including benefits and impacts, that may be used by the local media.	Local media adopt a negative stance.	Increased objections to the Preferred Option, necessitating further consideration and reporting on rejected options.	GCP PM	OPEN	3	2	6	Treat	2	2	4	Identify stakeholders and engage during lead in period to decision-making process.  The communications strategy will ensure local media coverage is balanced or positive and key messages get out, to mitigate negative stance adopted by the local media.	GCP
8	Consultation/Comms	KD 3-5	Negative consultation responses	Consultation on the Preferred Option will be held, with responses informing future stages	Preferred Option attracts negative responses.	Delays and cost overrun as options are re-evaluated. Possible further consultation and reputation damage.	GCP PM	OPEN	3	3	9	Treat	2	3	6	The communications strategy will ensure that the public and all stakeholders have access to information about the benefits of the scheme from an early stage. Ensure consultation is effective in terms of scope and reach  Local Liaison Forum (LLF) is a key element of the communications strategy to ensure people are aware of scheme benefits. Provide regular progress updates to LLF on development of Preferred Option  Communications to promote benefits.	GCP
11	Scheme Development	KD 3-5	Affordability of preferred option	Budgets are based on the OBC project cost estimates. Work for the FBC will provide greater detail and cost certainty.	Detailed designs, plans and estimates result in scheme costs that exceed the budget.	Re-evaluation and value engineering of the Preferred Option will result in delays and additional costs.	GCP PM	OPEN	3	4	12	Treat	2	4	8	Cost estimates will be calculated in a rigorous manner in accordance with GCP guidance, with appropriate risk allowance included, along with a realistic delivery programme during the detailed design stage.  ECI and value engineering workshops to be held during Preferred Option design development.	Service Provider
12	Scheme Development	KD 3-5	Patronage levels	The OBC is based on patronage forecasts current at the time of development. Forecast patronage levels may change during the development of the FBC.	The forecast patronage levels reduce by an amount that significantly affects the business case, reducing its viability.	Refinement of PT service levels and Travel Hub parking capacity and value engineering of infrastructure incur delay and additional costs.	GCP PM	OPEN	2	3	6	Treat	2	3	6	GCP City Access project is a key interdependency.  Further modelling is to be undertaken to estimate patronage levels based on validated operational assumptions including the current City Access proposals.  Regular engagement with City Access team.	Service Provider
14	Scheme Development	KD 2-5	Environmental constraints	Scheme assumes that environmental effects can be mitigated and biodiversity net gain targets met to the satisfaction of stakeholders.	Environmental surveys identify environmental issues that cannot be mitigated to the satisfaction of statutory stakeholders.	Changes to scheme required to deliver against environmental targets. Re-evaluation of different options, possibly including additional land take, will result in delays and additional costs.	GCP PM	OPEN	2	3	6	Treat	2	2	4	Prepare a scoping document setting out the scope of the Environmental Impact Assessment (EIA) and consult with all relevant stakeholders and statutory bodies.  An EIA will be undertaken to identify any environmental issues and an Environmental Statement produced. Environmental mitigation measures will be programmed to limit or avoid environmental harm.  Early engagement with LPA ecologist.  Co-ordination with drainage strategy.	Service Provider
15	Scheme Development	KD 2-5	Archaeological constraints	Scheme assumes that archaeological impacts can be mitigated to the satisfaction of stakeholders.	Archaeological surveys identify archaeological issues that cannot be mitigated within the constraints of the proposed scheme, to the satisfaction of statutory stakeholders.	Re-evaluation of different options will result in delays and additional costs.	GCP PM	OPEN	3	4	12	Treat	2	3	6	A desktop Archaeological Assessment has been undertaken to identify any archaeological sites of value. Early engagement with CCC archaeologist undertaken to identify requirements for archaeological investigations. Consider programme dependencies on design.  Where necessary, post Preferred Option selection and geophysical surveys, intrusive archaeological investigations will be commissioned at an early stage.	Service Provider
16	Project Funding	KD 2-5	Continued availability of scheme funding	Ongoing funding subject to changes in priorities for allocation of finite resources. Competing schemes within City Deal programme.	Future changes in priorities of competing schemes reduce funding for the scheme.	Support may be withdrawn, or the continuation of the scheme may be conditional on a review, which would incur delay and additional cost preparing business justification for the review.	GCP PM	OPEN	4	5	20	Escalate	3	5	15	Maintain good relationships with funding bodies and submit detailed and rigorous funding applications. Adequate resources will be devoted to maintaining funding applications.	GCP
17	GCP Resources	KD 2-6	Availability of GCP resource	It has been assumed that GCP has sufficient and appropriate resource to meet programme dependencies - information supply, reviews, comments, approvals, decisions.	Insufficient staff availability or capability leads to delays in provision of information and direction, or delays in the workflow of documentation.	Activities that are dependent on client action may be delayed, or may continue at risk. Programme delay. Additional cost associated with delay. Products developed that require later rework when information/ direction are provided.	GCP PM	OPEN	2	3	6	Treat	1	2	2	GCP to ensure that sufficient staff and consultant resources are deployed to the project and that the budget allocation for staffing and consultancy support is adequate.  Consultant to state working assumptions to GCP, advise direction being taken and manage the impact of any changes.  Collaborative approach to resource planning across all GCP projects. Early identification of any resource constraints. Project progress and resourcing reviewed at fortnightly progress meetings between GCP and consultant.	GCP
18	Scheme Development	KD 4-6	Extent of utilities work to be undertaken	Allowance for utilities made without full information and surveys being complete, or quotes/estimates from Statutory Undertakers.	Cost of emerging utilities alterations or diversions exceeds the budget allocation.	Delays and increased cost to re-evaluate options. Increases to scheme costs.	Supplier	OPEN	2	3	6	Treat	1	2	2	Conduct a thorough survey of the utilities on the Preferred Option route and consult with utility companies  Utilities surveys to be conducted at appropriate stages in the design process, with designs amended where possible to minimise impact.  Review during Value Engineering  Early request for C3 information to support next design iteration.	Supply Chain other
19	Scheme Development	KD 3-4	Unusual topographical conditions	The OBC assumes that there are no significant topographical issues. Assumptions are to be confirmed by surveys.	Topographical surveys identify significant issues to scheme delivery.	Delays and increased cost to re-evaluate options. Delays and increased costs to design, and implement mitigations.	GCP PM	OPEN	3	3	9	Treat	2	3	6	Use of LIDAR data to mitigate risk of major unforeseen issues emerging when full topographical survey data available. Topographical survey completed. Other surveys will be undertaken as appropriate.	Service Provider
20	External Stakeholders	KD 3-4	Land access	Scheme assumes that landowners/holders can be identified, and that access can be achieved by negotiation.	Inability to secure land access for surveys	Delay and additional cost associated with identification of interested parties, negotiation of access, and the use of powers.	GCP PM	OPEN	4	3	12	Treat	2	2	4	Identify and begin negotiations with third party landowners at the earliest possible opportunity in order to agree access. If necessary and as a last resort, the promoters will remind third party land owners of their intention to use powers to secure access.	Supply Chain other

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21	External Stakeholders	KD 2-5	Interface with developers and third parties	Planning assumes that third party plans do not introduce dependencies that affect scheme progress.  Two developers at least, are known to hold land crossed by the scheme and are active in preparing development plans for this land.	Emerging plans show misalignment when the scheme publishes a route, or when the developer publishes their planning application.	Changes to deliver alignment between the scheme and developers' plans delay scheme delivery activities.  Delays are introduced into plans, delaying milestone achievement. Costs increased due to prolongation, increased value of land where planning consent granted or planning effort incurred by the developer.	GCP PM	OPEN	3	4	12	Treat	2	3	6	The communications strategy is to include third parties and the sponsor with appropriate engagement strategies developed.  Property consultant to negotiate with developers.  Collaborative planning between affected parties to align plans and share awareness of constraints and mutual benefits ahead of applications.  Maintain dialogue with SCDC during the development of the Local Plan. Inform planners of the development of the Preferred Route for the project, to optimise the utility and value of the project to the Local Plan site allocations.	Supply Chain other
22	Project Management	KD 2-6	Interface with promoters of other transport schemes	Planning assumes that third party plans for other transport schemes do not introduce dependencies that affect scheme progress.	Emerging plans show misalignment.	Delays are introduced into plans, delaying milestone achievement and increasing costs due to prolongation.	GCP PM	OPEN	4	4	16	Treat	3	2	6	High level programme management is to undertake thorough liaison with all relevant transport authorities and scheme promoters.  Collaborative planning between affected parties to align plans and share awareness of constraints.	Programme Board
24	Scheme Development	KD 2-5	National and Local Planning regime	The scheme has been scoped to align to the National Planning Policy Framework and Local Plans.	External planning regime changes such that the scheme is no longer aligned.	Delays are introduced to allow realignment, delaying milestone achievement and increasing costs due to prolongation.	GCP PM	OPEN	3	3	9	Escalate	3	3	9	Fallback actions to ensure that the schemes are consistent with the latest Local Plans and continue engagement with local authorities as well as ensuring that appropriate development links are considered.	GCP
26	Project Management	KD 4-6	Consideration of construction and operation	The design team does not have access to specialist construction and operations advice	Constructors and operators make substantial changes to the design, to improve buildability and/or efficiency of operation.	Delays are introduced for redesign, delaying milestone achievement and increasing costs due to prolongation.	GCP PM	OPEN	3	4	12	Treat	2	2	4	Support preliminary and detailed design activities with construction, buildability, and operations advice, to deliver an optimised design for an operable scheme, and to minimise the need for changes once the contractor engages.  Independent construction contractor to provide support until the contractor is engaged and contracted.	GCP
27	External Stakeholders	KD 2-4	Cambridge Biomedical Campus access for public transport route	Undefined access constraints and requirements (physical and political) for the Cambridge Biomedical Campus site	All design options are rejected by Cambridge Biomedical Campus (CBC)	Delays are introduced for development of additional options, delaying milestone achievement and increasing costs due to prolongation.	GCP PM	OPEN	3	3	9	Treat	2	2	4	Maintain dialogue with CBC stakeholders. Property consultant to negotiate with developers.	GCP
28	Scheme Development	KD 2-4	Time and cost for delivery of new A11 crossing	Two options for route to Site C require a new A11 crossing. Outline design and cost estimates have been produced for the OBC.  Development of the crossing may be more complex than allowed for in the budget.	Development of the crossing takes longer than anticipated.	Delay and increased cost of design. Increased construction complexity drives schedule and cost increases. Increased operational costs.	GCP PM	OPEN	2	3	6	Treat	1	2	2	Identify alternative options not requiring a new A11 crossing. Further design work and discussions with Highways England.	Supply Chain other
29	External Stakeholders	Construction	Availability of A11 road space	Works on the bridge over the A11 will require TM and possession of the road from Highways England (HE). HE may have its own works and constraints that affect the availability of road space.	Road space not available at the time needed by the programme	Delays and prolongation costs. Milestones not met.	GCP PM	OPEN	2	2	4	Treat	1	2	2	Discussions with Highways England continuing. Requirement for works to adapt existing bridge is dependent on the Preferred Option selected for the CSET Phase 2 scheme. Project team to manage this interface.  Early contact with HE to explore opportunities for possession of A11	Service Provider
32	Scheme Development	KD 2-5	Land acquisition costs	The OBC is based on estimated values for land acquisition. Local land values may be volatile as the requirement for development land increases. Individual landholders may seek inflated prices for land critical to the scheme.	Land acquisition costs are significantly higher than budgeted.	Increased costs for scheme delivery. Possible delay and cost impact if alternative designs/routes are considered to avoid contentious areas.	GCP PM	OPEN	4	4	16	Treat	2	4	8	Ensure land cost estimates are robust and consider compensation payable. Negotiate with developers.	Supply Chain other
33	Scheme Development	KD 3-5	Agreement with public transport operator	Scheme will require a public transport operator to run services using the infrastructure. No agreement at this time for an operator to provide services.	No operator agrees to provide services.	Delay and additional cost to procure services on terms that will attract offers from operators. Realisation of scheme benefits severely compromised.	GCP PM	OPEN	2	4	8	Treat	2	2	4	Assessment of available operating models for providing services and market appetite to engage with these models. Ongoing engagement with public transport operators.	GCP
34	Scheme Development	KD 2-4	Development of OBC	The programme for preparation of the OBC is realistic, but tight.	Cost estimates and modelling of scheme benefits do not generate a robust Economic Case when initially combined	Additional time is required for further iteration to develop a recommended Preferred Option with a robust Business Case.	GCP PM	OPEN	2	3	6	Treat	1	2	2	Ensure adequate time is allocated in the programme for preparation of the Business Case, and data requirements are flagged up early to ensure all data required is available.  Continue to develop and refine Economic Case for Preferred Option, based on further modelling evidence.	Service Provider
35	Statutory Process	KD 3-5	Planning consent	The scheme schedule assumes that permissions and consents are granted according to typical timescales based on experience of previous similar applications.  There may be delays during the inspection, inquiry and the decision-making process by the Secretary of State.	Necessary orders and consents are not granted in time for construction or preparations.	Delay pending processing of applications. Additional costs, if further information is required.	GCP PM	OPEN	4	3	12	Treat	2	3	6	Early discussions with DfT TWA unit to understand key issues and evidence base required.  Include activities and products associated with TWAO submission in the plan, as soon as they are identified, to inform programme for submission and determination of application and resourcing of these activities.	GCP
38	Statutory Process	KD 3-5	Submission of TWAO	It is intended to use the TWAO process as a route to gaining planning consent.	Challenge to the use of TWAO.	DfT TWA unit may require additional information and justification to accept the application.  Delay and additional cost may be incurred if the challenge has to be addressed during the inquiry.	GCP PM	OPEN	4	4	16	Treat	3	3	9	Maintain dialogue with DfT.  Use of legal advice. Ensure consistent approach and decision making across C2C and CSET Phase 2 schemes.	GCP
40	Scheme Development	KD 3-5	Technology readiness for service	The scheme is dependent on the development and production of the technological solution that is capable of running guided vehicles at the required speeds.	The technological solution is not ready for the opening date, or late developments in the technology require changes to the design and construction of the infrastructure.	Delay and possible additional costs for the design and delivery of infrastructure associated with implementing a kerb-guided system.	GCP PM	OPEN	4	4	16	Treat	3	4	12	Review state of art in technology areas, and establish maturity at early stage. Avoid reliance on emerging technology unless risk can be managed.  Development and implementation of testing programme to provide assurance of capability of the selected technology to support running guided vehicles at the required speeds, and associated design requirements.	GCP
41	Supply Chain	Construction	Supply chain capacity	Scheme assumes that the supply chain has sufficient staff and availability of materials to deliver to meet the opening date.	Competing schemes or local availability result in a shortfall of staff and materials.	Delivery is slower than required by the programme, or delivery fails to meet quality standards. Delays and additional costs associated with prolongation and rework.	GCP PM	OPEN	3	3	9	Treat	2	2	4	Effective management and pro-active approach. Develop appropriate procurement strategy, including market engagement.	GCP
43	Scheme Development	KD 3-4	Options acceptable to Combined Authority	A shortlist of route and travel hub site options has been produced. Political considerations that may influence the selection of a Preferred Option have not been available.	None of the options is acceptable to CPCA.	Extensive rework to identify further options and develop to a stage where they can be supported by CPCA.	GCP PM	OPEN	5	4	20	Escalate	4	3	12	GCP to engage with CPCA at a strategic level.  At a project level, demonstrate compliance with the CPCA LTP Sub-Strategy Objectives. Collaborate with CAM consultants to develop a Preferred Option that supports regional CAM extension to Haverhill.	Executive Board
46	Statutory Process	KD 3-6	Changes to standards and legislation	The scheme is designed in accordance with current standards, with allowance being made where changes are anticipated.	Unanticipated changes to legislation or standards impact n the design.	Delay and additional cost associated with rework. Delay and additional cost associated with obtaining departures.	GCP PM	OPEN	3	3	9	Tolerate	3	2	6	Be vigilant of potential legislation changes and engage with statutory bodies.  Sensitivity analysis of emergent legislation changes to limit the volume of change to significant and material matters.	Service Provider
47	External Stakeholders	KD 3-5	Third Party Technical Approvals	The scheme schedule assumes that third party technical approvals are granted according to 'normal' timescales. It is known that where there are sensitive issues, or where the granting authority has resource constraints or competing demands, permissions and consents may take longer.	Necessary approvals are not granted in time for construction or preparations.	Delay pending processing of approvals. Additional costs, if further information is required.	Supplier	OPEN	4	4	16	Treat	2	2	4	Early engagement with relevant contacts in Highways England, Environment Agency, Network Rail, etc. to agree programme for technical approvals.  Develop alignment to minimise impact and interface with third party stakeholders.	GCP
48	Design	KD 3-5	Ground conditions	Scheme assumes that ground conditions do not give rise to onerous issues to design or construction.	Ground Investigation (GI) surveys identify GI issues that cannot be mitigated within the time and budget available.	Re-evaluation of different options will result in delays and additional costs. Additional investigation and design work will lead to delay and additional costs.	GCP PM	OPEN	3	3	9	Treat	2	2	4	Undertake appropriate GI to all affected areas of the proposals, including existing GI records and information.	Service Provider

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50	External Stakeholders	KD 4-6	Utilities works programme	Scheme construction depends on Statutory Undertaker (SU) works being complete prior to scheme activity. Constructor does not have a contractual relationship with Sus.	SU works not complete for construction activities to progress.	Delay and cost pending completion of works. Cost of rescheduling construction works around sterile areas.	Constructor	OPEN	3	3	9	Treat	2	2	4	Engage with affected Utility companies to agree delivery programme	Service Provider
51	Design	KD 3-5	Environmental Conditions	Scheme assumes that environmental conditions do not give rise to onerous issues to design or construction.	Environmental surveys identify issues that cannot be mitigated within the time and budget available.	Re-evaluation of different options will result in delays and additional costs. Additional investigation and design work will lead to delay and additional costs.	GCP PM	OPEN	4	3	12	Treat	2	3	6	Undertake appropriate environmental surveys and assessment to identify the scale and nature of potential impacts.  Existing environmental survey information reviewed. Further environmental surveys to inform EIA commissioned. Environmental appraisal undertaken during options assessment to support business case development.	Service Provider
53	Scheme Development	KD 3-5	Biodiversity Net Gain objectives	Assumption that Biodiversity Net Gain targets can be met by the scheme	Biodiversity Net Gain targets not met	Cost and delay associated with acquisition of land for offsetting or obtaining concessions.	GCP PM	OPEN	3	4	12	Treat	2	2	4	Develop methodology for managing Biodiversity Net Gain. Opportunities within shortlisted options identified. Develop opportunities within the preferred route.	Service Provider
54	Scheme Development	KD 3-5	Environmental survey consent	The scheme schedule assumes that permissions and consents are granted according to 'normal' timescales. It is known that where there are sensitive environmental, archaeological, or ownership issues, permissions and consents may take longer.	Necessary consents are not granted in time for surveys	Delay pending processing of applications. Additional costs, if further information is required.	GCP PM	OPEN	3	4	12	Treat	2	3	6	Project programme to take account of seasonal surveys and their currency in relation to planning consents.  Programme to allow adequate time for securing any required consents from statutory environmental bodies based on advice from relevant specialists.	Service Provider
57	Project Management	KD 2-6	Information management and control	Delivery of the scheme involves collaboration across multiple suppliers and the client organisations. Teams are not co-located, and do not share a single document repository.	Team unable to access current information, or uses superseded information.	Scheme stalls, or nugatory work is performed requiring rework. Delay and additional costs, plus reputation harm and impact on team morale.	Supplier	OPEN	3	3	9	Escalate	1	1	1	Implement Common Data Environment to share information and collaborate on deliverables.	GCP
60	Scheme Development	KD 3-5	Engagement with the local Highway Authority (CCC)	GCP developing the scheme. Highway Authority (HA) is CCC. Limited engagement with CCC to date. CCC as HA are able to affect GCP requirements and design direction, especially considering operation and maintenance work and costs, which may lead to additional scheme costs to cover future operation and maintenance.	Highway Authority raises objections to the scheme that result in rework.	Rework to design increases costs and delays scheme submission or approval by GCP, delaying start of works and eventual completion of the scheme. Reduced or delayed benefits.	GCP PM	OPEN	3	3	9	Treat	1	1	1	Commission further Stage 1 Road Safety Audit of the Preferred Option design from CCC, to provide the basis for further engagement.  Maintain contacts and relationships with CCC technical leads.  To avoid rework arising from CCC influencing changes to GCP requirements, collaboration between the three parties is needed.	Service Provider
61	Project Scope	KD 2-5	Scope of modelling with respect to growth and developments within the Local Plan, compared to aspirations for growth.	Growth levels assumed in modelling forecasts, and the inclusion of development schemes in the modelling depart from guidance.	Challenge to modelling at inquiry based on external stakeholder views on growth assumptions used in modelling.	Scheme stops. Programme may need to recommence. Additional work to deliver new evidence to the inquiry, elements of rework, additional cost and delay to achieving TWA order.	GCP PM	OPEN	4	3	12	Treat	3	2	6	Model alternative growth scenarios for the Preferred Option to augment the modelling based on Local Plan growth.  Work closely with other GCP project leads, CAM and CCC Modelling Team to agree how the schemes will interact and be assessed.	GCP
62	Statutory Process	KD 3-5	Consent for transport infrastructure in the Green Belt	Planning constraints protect the Green Belt. Two shortlisted sites for the Travel Hub are within the Green Belt. The Green Belt may lead to a lower performing site being favoured, if that site is outside the Green Belt, leading to a sub-optimal solution or the loss of user benefits in order to maintain protection of the Green Belt.	Recommended Preferred Option is rejected by GCP, or subsequently challenged by other stakeholders, on the basis of harm to the Green Belt.	Additional work (cost and delay) to justify the use of a Green Belt location. Additional mitigations required to landscape and/or screen the facility, incurring additional cost and time into the programme. Other option preferred, outside the Green Belt, delivering (potentially) lower user utility.	GCP PM	OPEN	3	5	15	Treat	2	5	10	Assessment of the impact of the project on the Green Belt, consistent with other GCP transport projects, completed. Report included in evidence base for scheme.  Continue to engage with key stakeholders on Green Belt issues. Development of a robust design and assessment evidence base.	GCP
63	Statutory Process	KD 3-5	Trees and Tree Protection Orders (TPOs) affected by infrastructure design	Known to be trees with TPOs in the area required for the transport infrastructure. Current design detail has not fully accounted for all trees.	Local Authority objection to TWA Order on the grounds of loss of trees.  Public objection to the removal of trees affecting reputation of stakeholders and associated parties.	Reputational damage.  Time and cost associated with dealing with Local Authority objections, or modifying the design to accommodate trees.	Supplier	OPEN	3	4	12	Treat	1	4	4	Design development for Preferred Option to take account of trees when developing detail.  Principal Designer workshops prior to commencement next stage of design to align design team direction to include consideration of trees and TPOs.	Service Provider
64	Statutory Process	KD 3-5	Adoption of highway assets	Scheme comprises highway elements that will be handed over to the local Highway Authority (HA).	HA rejects designs and construction of assets in offered state.	Cost and delay as designs and construction are reworked to meet the HA's requirements.	Supplier	OPEN	2	5	10	Treat	1	4	4	HA to be included in delivery stages - design and construction, to provide a 'phased acceptance' of the scheme.	GCP
65	Statutory Process	KD 3-5	Acceptance of scheme elements by Emergency Services	Assumption that the design of schemes and their elements to the relevant standards will result in the elements being accepted.	Scheme elements not acceptable to Emergency Services, e.g. Police objection to TROs. Possible Fire and Ambulance Service input.	May require scheme elements to be redesigned or be less effective, with lower benefits than anticipated. This could involve further design optioneering which will delay programme and involve additional cost.	GCP PM	OPEN	3	4	12	Treat	2	3	6	Early liaison with Emergency Services to explain scheme elements and integrate suggestions at an early stage to improve likelihood of acceptance  Identify appropriate timescale for meetings with Police and CCC Road Safety team and include in future programme updates	GCP
67	Scheme Development	KD 3-5	Cost of currently unpriced elements	Some elements of the design have not been costed in detail, but an allowance has been made based on estimates and previous works.	Cost of elements exceeds the current budget.	Re-evaluation, design changes, and value engineering will result in delays and additional costs.	GCP PM	OPEN	5	3	15	Treat	2	3	6	During design development, cost estimates will be reviewed, and allowances replaced with detailed costings where possible.  Property consultant will develop detailed costs based on land acquisition plans. Regular liaison meetings to progress land costs.	Service Provider
69	Scheme Development	KD 2-5	Scheduling use of third parties to undertake modelling.	CSRM modelling is run by Atkins on behalf of CCC. Server capacity for model runs is a constraint. The contractual relationship is from GCP to CCC to Atkins.	Delays in commissioning or completing modelling.	Model runs for Preferred Option required for EIA and TA delayed, delaying subsequent assessment tasks.	GCP PM	OPEN	4	3	12	Treat	3	2	6	Engagement between GCP, CCC, Atkins, and consultants to identify and programme CSRM model runs required for all GCP schemes and CAM completed.  Monitor progress against this programme.	Service Provider
70	Project Scope	KD 3-5	Suitability of infrastructure for vehicle	Rochdale envelope approach taken to assess scheme impacts (worst case). Need to accommodate proposed CAM vehicle (18m articulated).	Some aspect of the vehicle or its requirements exceed the provision based on the assumed envelope.	Time and cost associated with redesign to meet 'oversized' characteristic. Possible reputation harm.	Supplier	OPEN	2	3	6	Treat	2	2	4	Agree vehicle types, envelope and characteristics to inform design. Identify standards for interfaces to be implemented.  Early agreement of key design requirements and parameters for route alignment. Agree assumptions regarding interim vehicle propulsion and guidance technology to inform environmental assessment (particularly noise and air quality impacts).	GCP
75	Statutory Process	KD 2-5	Guidance technology	Scheme design assumes that technological guidance will be approved in time for in-service dates to be achieved.	Technological guidance not approved within required timescales	Design change to kerb-guided system.	GCP PM	OPEN	4	4	16	Treat	4	3	12	Activities to promote change to GTMO. Engagement with CPCA, CCC, etc. Support to Mayoral engagement with DfT and Ministers.  Need to understand parallelism in plan between legislation and scheme.  Allow the possibility of a change to kerb-guided within the envelope and design.	GCP
76	Statutory Process	KD 3-5	Type approval and certification of a vehicle using optical guidance technology	Optical guidance technology is not in use in the UK. Currently no vehicles have been certified for UK use.	Type approvals not in place in time for vehicles to be ordered and delivered in time for the scheme go-live date.	Vehicles unavailable for scheme, leading to rework of design and construction to enable use of alternative vehicle type.	Supplier	OPEN	3	4	12	Treat	3	3	9	Engagement with Vehicle Certification Agency (UK Type Approval Authority) to understand approval requirements, process, timescales and costs to inform and direct vehicle suppliers.  Early testing of optical guidance technology.	GCP
77	Supply Chain	KD 3-5	Single source of optical guidance technology	Scheme relies on availability of suitable guidance technology. There is currently a single supplier of optical guidance technology.	Supplier unable to provide guidance technology for scheme.	Survey market for potential alternative sources of guidance technology.  Design change to kerb-guided system.	Supplier	OPEN	3	4	12	Treat	3	3	9	Monitor development and performance of optical guidance systems and alternative forms of technological guidance. Undertake testing to verify performance and suitability of available technology.  Programme-level Technology Working Group established.	GCP

### Cambridge South East Transport Phase 2 Risk Register

Risk ID#	Risk Category	Project Stage	Title	Risk Cause	Risk Event	Impact	Risk Owner	Risk Status	Inherent Risk Rating			Mitigation	Residual Risk Rating			Mitigation Action	Mitigation Action Owner
78	Statutory Process	KD 2-5	Use of TWA to gain consents.	GTMO does not currently provide for technological forms of guidance. Assumed that legislation will have amended the GTMO to accommodate technological guidance.	Unable to use TWA to gain consent for the scheme.	Delay pending alternative approach to consents, or to allow the presentation of a kerb-guided scheme.	GCP PM	OPEN	4	4	16	Treat	4	3	12	Legal advice and promotion of a revision to the GTMO.	GCP
80	External Stakeholders	KD 3-5	Land acquisition and availability	Scheme assumes that landowners/holders can be identified, and that acquisition can be achieved by negotiation.	Inability to secure land access for temporary use in construction and acquisition for scheme delivery by negotiation.	Delay and cost associated with application and use of Compulsory Purchase powers.	Bruton Knowles on behalf of GCP	OPEN	4	3	12	Treat	1	3	3	Concurrent with negotiations, prepare applications as required for the use of powers, to be instigated in time to acquire the land for temporary use and scheme delivery. This avoids the delay to the scheme delivery, albeit at the cost of preparing an application that may not be needed.	Supply Chain other
81	Scheme Development	KD 3-4	Impact of COVID-19	COVID-19 situation and Government guidance do not permit programme-critical activities to be progressed	Unable to undertake programme-critical activities	Delays and additional costs associated with prolongation	GCP PM	OPEN	5	4	20	Treat	5	3	15	Review current activities and those planned for the next 3 months. Identify those that can and can't be progressed. For those that can't be progressed, identify actions that can be taken to mitigate impact on overall programme.	Supply Chain other

