

Scheme :	Mass Rapid Transit (MRT) Phase 2 and Park and Ride Scheme	Project No.	5168700		
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Milestone :	Design & Construction	Review Ref	Draft	Date :	
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Likelihood		
1	Very Unlikely	5%
2	Unlikely	10%
3	Possible	20%
4	Very Possible	30%
5	Almost Certain	50%
6	Certain	100%

Timescale Impact				
		Min	Expected	Max
1	Insignificant	None	1 week	2 weeks
2	Minor	1 week	2 weeks	1 month
3	Moderate	2 weeks	1 month	3 months
4	Serious	1 month	3 month	6 months
5	Catastrophic	3 months	6 months	1 year

#### Cost Estimate Methodology

A workshop was undertaken with the Local Authorities and stakeholders to determine the risks and their quantification documented in this Risk Register. The 'Most Likely' (Column J) determined value of each risk is based on the scheme's capital costs multiplied by a magnitude percentage determined at the workshop. This value for each risk has been multiplied by the risk's Likelihood (Column G) to determine the Quantified Risk value (Column M). The Updated Quantified Risk value (Column N) has been determined by multiplying this value by the factor of the difference between the NPIF Bid and this Business Case's capital costs.

Risk Ref.	Nature of Risk	Implications	Mitigation	Risk Owner	Likelihood	Impact Type	Cost Estimate £			Timescale Impact	NPIF Bid Quantified Risk	Updated Quantified Risk (No Foxborough, P+R included)
							Min	Most Likely	Max			
S1	Withdrawal of funding for the scheme.	Reputational damage and potential future loss of funding for other schemes. (Costs based on non-funding of total package)	Continued discussion and regular briefing notes.	Client	5%	Both	£0	£728,036	£728,036	5	£36,402	£55,485
S2	Unfavourable response to wider public consultation.	Reputational damage and potential future loss of funding for other schemes. (Costs based on non-funding of total package)	Ongoing dialogue with planning officers to address likely concerns. Undertake public consultation and close working with Ward Members and NAGs.	Client	10%	Both	£0	£728,036	£728,036	3	£72,804	£110,971
S3	Scheme does not integrate with or complement other transport initiatives.	Reputational damage and potential for future loss of funding for other schemes. (Costs based on non-funding of total package)	Early highlighting of issues should be possible.	Designer/Client	5%	Both	£1,508,929	£1,508,929	£1,508,929	5	£75,446	£114,999
S4	Scheme does not integrate with wider policy.	Reputational damage and potential for future loss of funding for other schemes.	Thorough exploration of Thames Valley Berkshire SEP has been undertaken. Early highlighting of issues should be possible.	Designer/Client	5%	Both	£301,786	£603,572	£905,358	5	£30,179	£46,000
F1	Insufficient scheme input data to allow for a more detailed cost estimate (e.g. topo).	Unanticipated additional scheme costs - risk cost on 25% variation	Regular meetings with Business Case Lead and Client. Detailed design stage means that cost estimates are considered to be very accurate. Check and Review meeting internal and with client - request topo survey undertaken prior to detailed design.	Designer/Client	10%	Cost	£754,465	£1,508,929	£2,263,394	4	£150,893	£229,998
F2	The tender prices received from the contractors exceed the available budget to construct the schemes.	Requirement to find additional funding to cover cost overruns.	The current cost estimate is based on a Bill of Materials with appropriate allowances for optimism bias and risk.	Designer/Client	50%	Cost	£150,893	£301,786	£1,207,144	3	£150,893	£229,998
F3	Changes to inflation assumptions (potentially as a result of lack of contractor capacity).	Potential increase in scheme costs beyond current budget resulting in the need to source additional funding.	Inflation assumptions are contained within the scheme cost estimates. Assumptions being reviewed against industry predictions at each main stage of cost estimate review.	Client	10%	Cost	£150,893	£301,786	£1,207,144	2	£30,179	£46,000
F4	Delays in construction programme resulting in increased contract administration costs.	Additional funding needs to be found to cover additional administration costs.	Ensuring design, investigations, programme and procurement are robust, reducing likelihood of construction delays.	Designer	20%	Both	£150,893	£301,786	£1,207,144	2	£60,357	£91,999
F5	Potential for cost increases - cost estimates at this stage are relatively high level.	LEP contribution would be capped - resulting cost increases could result in a shortfall in funding.	Check costs against similar schemes delivered in Slough.	Designer	30%	Cost	£301,786	£603,572	£1,207,144	1	£181,072	£275,998
F6	Cost increases would result in a decrease in the BCR.	Change to scheme's Value for Money rating.	Ensure sufficient risk budget to be included in the scheme's outturn cost. Ensure sufficient risk budget and optimism bias.	Designer/Client	5%	Cost	£150,893	£301,786	£452,679	2	£15,089	£23,000
F7	Delivery programme - LEP timescales for MRT Phase 2 -	Could jeopardise future funding bids.	Only include schemes in the MRT Phase 2 bid which have reasonable prospect of being delivered by 2020.	Client	5%	Delay	£150,893	£301,786	£452,679		£15,089	£23,000
D1	Incomplete or late delivery of outputs by design teams.	Delays to overall programme and possibly not submitting designs. (costs based on 10% capital cost)	Ongoing programme monitoring. Other resources available where holdups occur.	Designer/Client	10%	Delay	£301,786	£603,572	£905,358	3	£60,357	£91,999
D2	Design errors/omissions that could lead to designs being revised.	Delays and increased design costs. (costs based on 5% capital cost)	Independent Design Reviews. Robust check/approval process.	Designer	20%	Both	£150,893	£301,786	£452,679	2	£60,357	£91,999
E1	Unexpected protected species identified during main works.	Suspension of works in certain areas resulting in delay the delivery programme. (10% of capital costs)	Ongoing surveys.	Designer/Client	10%	Delay	£301,786	£603,572	£905,358	4	£60,357	£91,999
E2	Any requirement to fell trees/loss of vegetation could be opposed during consultation and by SBC Environmental Officers.	Additional expense and delays if changes in design are required. (2.5% of capital costs)	Trees will need to be relocated in a location acceptable to all stakeholders. Draft landscaping proposals and produce environmental impact reports.	Designer	10%	Both	£75,446	£150,893	£226,339	2	£15,089	£23,000
E3	Utility diversions. The exact impact on utilities, and therefore the cost of dealing with these, cannot be guaranteed.	Additional costs to the overall budget of the scheme.	Whilst scheme costs do include for utility diversions, this will also be considered through the design process and value engineering will be employed where necessary to deal with any significant issues encountered.	Client	5%	Both	£301,786	£603,572	£905,358	2	£30,179	£46,000
P1	Procurement method not confirmed.	Scheme delay and cost increases if procurement process challenged. (5% of capital costs)	Confirm the procurement method to be used.	Client	10%	Both	£150,893	£301,786	£452,679	2	£30,179	£46,000
P2	TTR/TRO late submission/objections.	Delay in approval may delay overall project. (2.5% of capital costs).	Allow sufficient time for processing and seek defined Council guidance on TTR/TRO processes. Highlight need for TTR/TRO to the client. Client to process the applications at an early stage.	Designer/Client	20%	Delay	£0	£0	£0	2	£0	£0
P3	Increases in statutory undertakers (utilities) apparatus diversion costs.	Additional costs to the overall budget of the scheme. (10% of capital costs)	Apply legally for C3 notices for cost update. Revise costs at C3 budget estimate stage.	Designer	10%	Cost	£41,423	£414,225	£828,450	2	£41,423	£63,138
P4	Delays in awarding contract due to extended queries on tenders, and tender interviews.	Delay of award of contract reducing mobilisation/construction	Detailed design and appropriate tender period. Full design review of tender documents.	Designer	20%	Delay	£150,893	£301,786	£452,679	3	£60,357	£91,999
P5	Returned tenders exceed budget.	Additional funding would be required to cover shortfall.	Develop a plan identifying the maximum limit of construction tender cost and applicable split between parties. Correct procurement method process identified to ensure best value. Ensure cost estimates are as robust as can be at this stage.	Client	20%	Cost		£301,786		3	£60,357	£91,999
P6	Asset inventory inaccurate or incomplete leading to incomplete understanding of asset condition.	Cost estimates may be wrong resulting in possible claims for variations from the contractor.	Ensure accuracy and updating of inventory databases.	Designer	20%	Cost	£75,446	£150,893	£226,339	1	£30,179	£46,000
P7	Land required to construct the scheme that is not currently in developer's ownership. This includes the land required for New P+R facility. Negotiations for purchasing this land are in progress via a third party. However there remains the possibility that this will not be successful, in which case a CPO process and Environmental Impact Assessment may be required, with potential cost and a timescale impact of up to 18-24 months.	Cost and potential delay	Modification to the scheme to avoid the land in question, or early engagement and negotiations	Client	10%	Both	£3,750	£7,500	£11,250	2	£750	£1,143
C1	Changes to design (after construction has commenced).	Increased costs and delays to the programme as a result of design changes.	The detailed design for the contract tender will provide as much detail as possible on the site conditions and methods of construction so as to avoid questions about "buildability".	Designer	20%	Both	Minor changes required (1%)	£301,786	Significant changes required (10%).	3	£60,357	£91,999
C2	Coordination with other projects/highways works	Delays or changes to the programme.	Ensure contractor is aware of possible disruption and programme issues at tender stage. SBC to ensure early involvement of relevant streetworks teams to coordinate activities on highway network.	Client	20%	Delay	£150,893	£301,786	£452,679	2	£60,357	£91,999
C3	Statutory undertakers (utilities) apparatus not identified - extent of diversions required. Insufficient time to carry out C2 searches before bid submission.	Striking of underground cables causing additional costs and time delays required to fix breaks. Costs to divert services around proposed infrastructure.	C notice procedure. Early utility/contractor involvement and trial hole checks. CAT scan before careful dig. Designer to consult with Statutory undertakers.	Designer/Client	20%	Both	£207,113	£414,225	£621,338	2	£82,845	£126,276

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Amendments for purposes of issue: Removed Risks that are N/A to this scheme.

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