

# APPENDIX 14

## Risk Register

Project Risk Register

Title	Category	Risk Description	Owner	Status	Strategy	Probability	Budget	Schedule	Pre Mitigation Risk Rank	Mitigations	Probability	Budget	Schedule	Post Mitigation Risk Rank
Business Case sign off delay	Funding	If the Business Case is not signed off by programme date for the award of contract, then there will be a delay to works commencing onsite	Herefordshire Council	Open	Treat	L	VL	M	10	Business Case has been submitted to ITE. Feedback has been considered and further submissions planned to enable sign off by end of October. Explore use of contract clauses. E.g. contractor prices valid for a period of time.	VL	VL	M	5
OJEU Process causes delays	Procurement	Current programme allows for the OJEU procurement time. However if the ITT is delayed beyond end of October this will delay the works commencing on site. If there are a large number of Tenders to appraise then this may cause a delay to the programme	Herefordshire Council / BBLP	Open	Treat	VL	VL	VL	1	Sufficient resource engaged to allow contract documents to be finalised by end of October. Additional resource to be mobilised if a large number of Tenders are received. Internal approvals are in place to commence procurement and an allowance for approval to award contract is contained within the current baseline programme	VL	VL	VL	1
Stakeholder requirements cause delay to the CLR programme	Stakeholder Management	Stakeholder requirements cause delay to the CLR programme. For example stakeholder access restrictions could result in delaying programme. Design and delivery of accommodation works could result in increase cost and programme delay if stakeholder requirements change	Herefordshire Council / BBLP	Open	Treat	M	L	L	9	On-going engagement with key stakeholders. In principle design has been agreed with stakeholders. Regular meetings are taking place to finalise design and agree programme for implementation. A CLR specific stakeholder strategy is being developed as we approach the delivery stage of the project	L	L	L	8
Traffic modelling results inadequate for approval	Design & Appraisal	Traffic modelling results inadequate for design approval therefore leading to design changes resulting in increase cost and delays.	Herefordshire Council / BBLP	Open	Terminate	VL	VL	VL	1	ITE feedback indicates a robust economic case				N/A
Traffic model unacceptable to ITE	Design & Appraisal	ITE considers Traffic model to be out of date due to land use changes post model validation	Herefordshire Council	Closed	Treat	L	VL	L	8	Demonstrate that the current model is fit for purpose against the existing traffic flows	VL	L	L	4
Jewson land acquisition	Land	Land acquisition agreement not finalised	Herefordshire Council	Closed	Terminate	VL	VH	VH	18	The risk has been eliminated as land vests to HC now				N/A
Jewson land acquisition delays	Land	Land acquisition agreement delayed	Herefordshire Council	Closed	Treat	L	VL	L	8	The risk has been eliminated as land vests to HC now				N/A
Unforeseen Stats (Service Connections)	Construction	Current design is based on GIS information and is yet to be positively identified by ground investigation. Unforeseen service connections encountered during construction stage could cause re-design and therefore impact on cost and schedule.	Herefordshire Council	Open	Tolerate	H	VL	VL	6	C4 estimates have been completed for the majority of STATS and allowance has been made in the base estimate. Any minor service encountered can normally be accommodated / relocated in a short period of time. Positive identification of STATS will take place in advance of main road works commencing onsite.	M	VL	VL	3
Unforeseen Stats (Network Stats)	Construction	Current design is based on GIS information and is yet to be positively identified by ground investigation. Unforeseen Strategic network Stats encountered during construction stage could cause re-design and therefore impact on cost and schedule.	Herefordshire Council	Open	Tolerate	VL	H	M	11	C4 estimates have been completed for the majority of Stats and allowance has been made in the base estimate. Positive identification of STATS will take place in advance of main road works commencing onsite. Trade off analysis to be carried out to evaluate the cost of service diversion versus re-design cost and programme ahead of main road works commencing onsite	VL	M	L	5
Drainage design requirements	Design & Appraisal	possibility of having to re-design the attenuation based on drainage consent requirements. Drainage consent process has not yet been completed and this has the potential for re-design and increase cost and delay to programme	Herefordshire Council / BBLP	Open	Treat	H	M	L	16	Additional resource allocated to complete drainage consent processes as quickly as possible	H	M	VL	16
Archaeology find	Construction	Presence of Archaeology found along the link road, potentially leads to delay and re-design	Herefordshire Council	Open	Tolerate	L	VL	M	10	Intrusive archaeology survey's and desk top studies have been carried out to inform scheme design and planning application. Works commencing on site to further investigate the most sensitive areas in advance of main road works commencing.	VL	VL	M	5
Unforeseen Ground conditions / contamination	Construction	Poor ground conditions and or contamination resulting in remediation costs and delays	Herefordshire Council	Open	Tolerate	M	M	L	13	Ground investigation work will take place in advance of main works to establish the extent of contamination prior to main road works commencing. This will allow the programme to be aligned in accordance with the amount of contamination found	M	L	VL	9
Undiscovered protected species	Construction	Presence of protected / invasive species identified on site which are not covered by the ecological surveys carried out to date will lead to delay.	Herefordshire Council	Open	Treat	VL	VL	M	5	Ecology surveys carried out. Further surveys planned. Ecological watching brief will be undertaken as required	VL	VL	M	5
Undiscovered invasive species	Construction	Presence of invasive species identified on site which are not covered by the ecological surveys carried out to date will lead to delay.	Herefordshire Council	Open	Treat	VL	VL	L	4	Ecology surveys carried out. Further surveys planned. Ecological watching brief will be undertaken as required	VL	VL	L	4

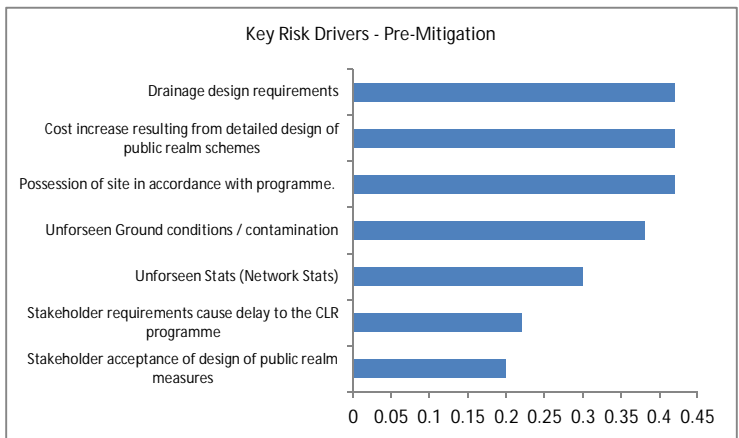
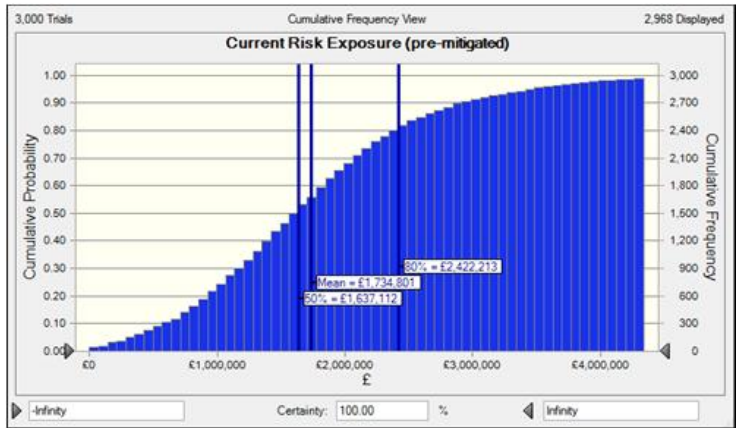
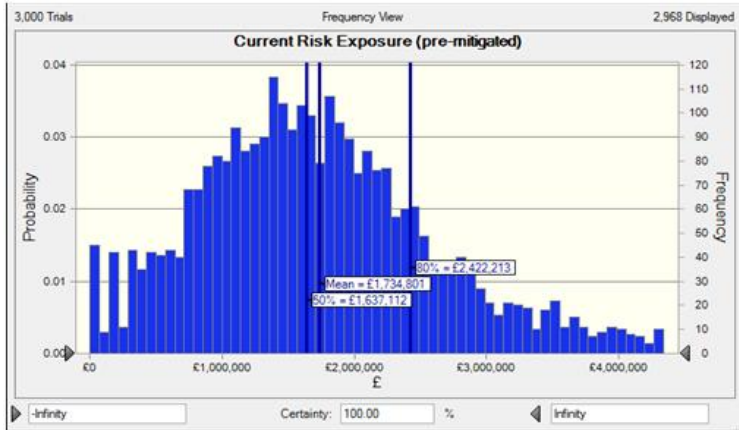
## Project Risk Register

Title	Category	Risk Description	Owner	Status	Strategy	Pre Mitigation Risk Rank			Mitigations	Post Mitigation Risk Rank				
						Probability	Budget	Schedule		Probability	Budget	Schedule		
Stakeholder acceptance of design of public realm measures	<b>Design &amp; Appraisal</b>	Consultation results in re-design leading to increase in cost and programme.	Herefordshire Council / BBLP	Open	Treat	M	L	L	<b>9</b>	Consultations have taken place with key stakeholders who in principle support the outline design of the scheme. Further consultation will take place to inform detailed design	L	L	L	<b>8</b>
Stakeholder agreement / buy in into the proposed design of Transport Hub	<b>Key Stakeholders</b>	Stakeholder consultation (Particularly Network rail and bus operators) results in re-design leading to increase in cost and programme.	Herefordshire Council / BBLP	Open	Treat	L	L	M	<b>10</b>	Consultations have taken place with key stakeholders who in principle support the outline design of the scheme. Further consultation will take place to inform detailed design	VL	L	M	<b>5</b>
Stakeholder agreement / buy in into the proposed design of Blueschool street.	<b>Key Stakeholders</b>	Historic England requirements response results in re-design leading to increase in cost and programme.	Herefordshire Council / BBLP	Open	Treat	L	L	M	<b>10</b>	Consultations have taken place with Historic England during winter 2014 who in principle supported the outline design of the scheme. The initial concerns have been addressed in the prelim design. Further consultation will take place to inform detailed design when Historic England will be further engaged with.	VL	L	M	<b>5</b>
Cost increase resulting from detailed design of public realm schemes	<b>Design &amp; Appraisal</b>	Cost increase resulting from detailed design of public realm schemes. Scheme costs are based on current outline design of the public realm scheme	Herefordshire Council / BBLP	Open	Tolerate	H	M	VL	<b>16</b>	Allowance in the form of cost estimate uncertainty made within the overall outline design costs to recognise this.	H	M	VL	<b>16</b>
Unidentified buried structures	<b>Construction</b>	Potentially Unidentified buried structures along the line of the CLR found leading to increased costs and programme delay	Herefordshire Council	Open	Treat	L	VL	VL	<b>2</b>	Scheme is aware of one structure which will be managed accordingly during construction. Historic land records have been reviewed and schedule GI works will provide further insight	VL	VL	VL	<b>1</b>
Possession of site in accordance with programme.	<b>Construction</b>	Possession of site in accordance with programme. Risk of delays due to possession of Royal Mail car park and an individual commercial business relocation.	Herefordshire Council	Open	Treat	L	H	H	<b>14</b>	On-going engagement with Royal Mail and business owner. Regular meetings are taking place to finalise design and agree programme for implementation. Legal agreements in place to support delivery to programme.	VL	H	H	<b>11</b>
Delay to technical sign off by Highways England for section 6	<b>Design &amp; Appraisal</b>	Delay to technical sign off of trunk road element of scheme by Highways England.	Herefordshire Council / BBLP	Open	Treat	VL	VL	VL	<b>1</b>	On-going discussions with Highways England. Appropriate audits undertaken to ensure compliance with standards. Junction operational modelling undertaken to assess the impact of the scheme on the key junctions with trunk road network.	VL	VL	VL	<b>1</b>
Extreme Weather	<b>Construction</b>	Extreme Weather leads to delays	Herefordshire Council	Open	Tolerate	VL	VL	VL	<b>1</b>		VL	VL	VL	<b>1</b>

### RISK EXPOSURE - PRE MITIGATED

Forecast: Current Risk Exposure (pre-mitigated)	
Percentile	Forecast values
0%	£0
10%	£626,486
20%	£956,824
30%	£1,203,540
40%	£1,427,735
50%	£1,637,112
60%	£1,859,459
70%	£2,109,086
80%	£2,422,213
90%	£2,946,784
100%	£5,780,380

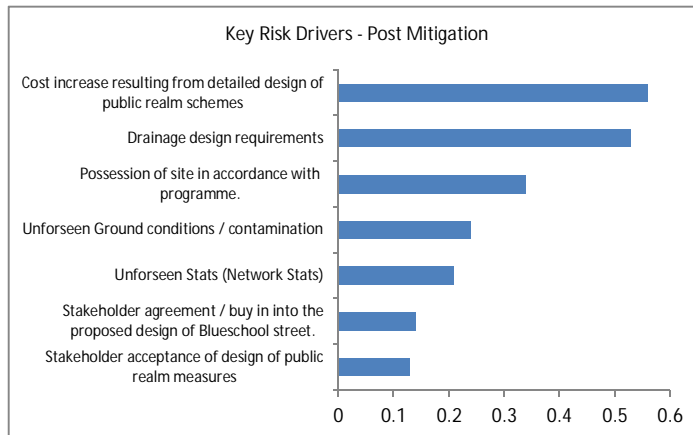
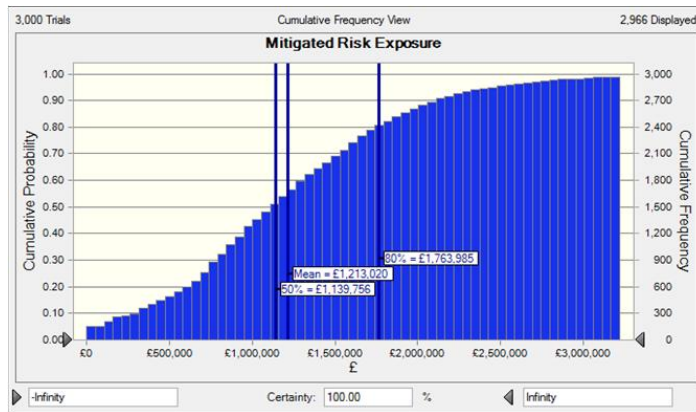
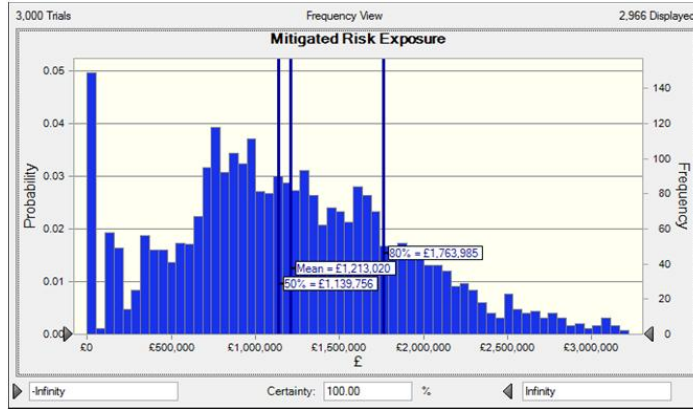
Forecast: Pre-Mitigated Risk Exposure	
Statistic	Forecast values
Trials	3,000
Mean	£1,734,801
Median	£1,637,112



## RISK EXPOSURE - MITIGATED

Forecast: Mitigated Risk Exposure	
Percentile	Forecast values
0%	0
10%	322,335
20%	638,599
30%	807,945
40%	966,276
50%	1,139,756
60%	1,327,266
70%	1,552,796
80%	1,763,985
90%	2,138,609
100%	4,079,382

Forecast: Mitigated Risk Exposure	
Statistic	Forecast values
Trials	3,000
Mean	£1,213,020



# Risk Assessment Matrix

SK ASSESSMENT MATRIX										
	Impact	Budget	Schedule		Probability					
		GBP			VL	L	M	H	VH	
	Very High	>£2M	> 12 months	VH	18	19	22	24	25	2
	High	1M - 2M	9 - 12 months	H	11	14	17	21	23	3
	Medium	1/2- 1M	6 - 9 months	M	5	10	13	16	20	4
	Low	£250k - £1/2M	3- 6 month	L	4	8	9	12	15	5
	Very Low	<£250k	< 3 Months	VL	1	2	3	6	7	6
					VL	L	M	H	VH	
					Very Low	Low	Medium	High	Very High	
					< 5%	5% to 20%	20% to 50%	50% to 70%	> 70%	