

## Appendix 'B'

### Risk management summary

"A risk log has been established (see Appendix B 'Risk Assessment Log', is being maintained and which has informed the current scheme estimate. Each risk has been evaluated, is being monitored and mitigation measures are being put in place as appropriate.

The risk monitoring and mitigating will remain with the project for its whole duration. The following are a number of key risks."

There would be project risk if the business cases for funds (as highlighted) are not successful. If this is the case, the project will not proceed as planned until other funding sources are secured.

Risk of clawback of the LEP contribution as a result of delay in housing delivery. If this risk is not managed by others, there is a risk that the county council as scheme promoter will be required to return the LEP contribution and make an additional financial contribution accordingly.

The land to deliver the road is to be provided by Kensington Developments Limited who is also financial contributor to deliver the scheme. This is a low risk as the delivery of the road is a requirement for Kensington Developments Limited with regard to their Queensway residential site.

Other risk elements relate to Environment Agency consents. Consent applications have been submitted by the developer's appointed consultants following direct discussions between representatives of Kensington Developments Limited and the Environment Agency.

Agreement and commencement of diversions and protection works to all utilities within or above the existing highway or on the route of the new link road could influence the start of the project incurring delays with consequences on project costs. The statutory process on utility requirements has been commenced by both the county council and Kensington Developments Limited.

Agreement with Highways England on the signing requirements on the motorway gantries. There is a risk that motorway gantries require replacing to accommodate the new signing requirements. Options are being explored with Highways England to mitigate this risk.

**From a construction perspective:**

Poor ground conditions (as the road is built on moss) requires ground surcharge and ground excavation. This could impact on the project programme or additional materials/plant being required. This risk has been quantified in the cost estimate, the value of which will be kept under review.

The influence of adverse weather could impact on the construction duration, extending ground water pumping or additional diversions of existing water courses required. Both have secondary consequences on cost whether additional materials are required for road construction or temporary purposes or requirements for additional plant and equipment. This risk has been quantified in the cost estimate, the value of which will be kept under review.

There are land related 'pinch points' where Kensington Developments Limited do not control land much beyond that required for the link road which affects the space required for the construction process. This could result in additional materials and plant being required to ensure that the neighbouring land is not impacted on. Consideration has been given to the construction process as part of the scheme design and this risk has been quantified in the cost estimate, the value of which will be kept under review. Discussions are progressing with affected utility companies in these areas to further mitigate this risk.

## Appendix 'B' Risk Assessment Log

### M55 Heyhouses Link Road, Draft Risk Assessment Guideline (RAG) (25 July 2017)

Likelihood	Risk Score					
Very High	5	5	10	15	20	25
High	4	4	8	12	16	20
Medium	3	3	6	9	12	15
Low	2	2	4	6	8	10
Very Low	1	1	2	3	4	5
		1	2	3	4	5
		Very Low	Low	Medium	High	Very High
		Impact				

KEY:

	High Threat
	Medium Threat
	Low Threat

Risk Totals (from table below)		
Risk Low		£1,977,500
Risk medium		£1,170,000
Risk High		£815,000
<b>Total Risk</b>		<b>£3,962,500</b>



8	Electric costs (diversions/protection) exceed paid informal Kensington discussions (C3 Budget Cost C4 Detail Cost)	20	£ 65,000	Possible start/during construction delays	Further mitigation required, possible update of programme			
9	BT costs exceed the paid (informal) Kensington discussions (C3 Budget Cost C4 Detail Cost)	25	£ 200,000	Possible start/during construction delays	Further mitigation required, possible update of programme			
10	Agreements with utilities delays programme	10		Delays could impact on start	Update programme and limit project delays			
11	Delivery of utility diversions/protection results in programme delays	10	£ 60,000	Possible start/during construction delays	Update programme and limit project delays			
12	Delivery of new road section within the constrained existing highway boundary (width, utilities, poor ground conditions, excavating below water table), results in additional time/materials/plant/change in construction approach	25	£ 100,000	Delays could impact on programme	Increased cost of delivering new section of road, update programme			
13	Working constraints on Whitehills roundabout	12		Influences management on the local network and possible delays to deliveries during peaks				

14		Moss sluice and branch drain, significant working constraints (width, utilities, poor ground conditions, excavation below water table)	16	£ 60,000	Some construction delays due to abortive works	20% increase in cost to mitigate (exclude structure costs)			
15	13th July	Influence of drainage on ground water protection zones	3	£ 40,000	None	Additional materials required and the use of a lining			
16		Ground settlement takes longer than anticipated	3		Delays programme and road construction	Programme to be adjusted			
17		Surcharge requires additional materials	9	£ 200,000	Delays as a result of the need for additional materials	5% increase in materials and compaction			
18		Agreements required with adjacent land owners to satisfy access requirements, over sailing	12	£ 500,000	if known in advance, no programme delay	Alternative construction method required			
19		Poor weather conditions results in project delays	12		Influences construction assume 3 month overall project delay	Assumed 3 month delay			
20		Poor weather conditions results in greater materials on haul road	20	£ 40,000	Limited programme delay until haul road is usable	20% increase in materials			
21		Poor weather conditions requires additional water pumping or increases duration of water pumping or modifications to watercourse diversions	15	£ 100,000	Poor weather could slow down construction and incur programme delays	Use of additional pumping equipment or for extended period of time			

22	Poor ground conditions requires additional temporary haul roads to deliver structures, additional equipment, plant or materials, as well as hire additional plant	16	£ 250,000	Poor weather could slow down construction and incur programme delays	Construct additional, haul road, use additional materials and plant			
23	Imported materials cannot be provided by nearest quarry	9	£ 180,000	No programme impact if known in advance	5% premium of imported materials			
24	Imported material cannot be provided at rate required resulting in delay	9	£ 60,000	Construction delays	Assumed a 3month project delay			
25	Excavated earth (with additives) is not suitable for reuse	6	£ 1,000,000	Some programme delay as additional handling is required and requires Kensington support	Addition 25% of materials need to be imported and compacted. Unsuitable earth to be removed and usable on the Kensington site			
26	Safety audits require additional work	4	£ 100,000	Post construction	Additional road markings, signing and other minor changes			
27	Low performance of (sub-contractors)	4	£ 100,000	Some programme delay	Responsibility of main contractor, additional contractors or replace.			
28	Further accommodation works required	4	£ 250,000	Could delay start of construction	Fencing, car parking, drainage, temporary ponds			
29	Further design required during contract	4	£ 25,000	None, if known in advance	have design consultants available when required			

30		Part 1 claims exceeding budget	2	£ 162,500	Post construction		ensure full consideration is given to dwellings impacted on			
31	13th July	Delay in EA approval	5		Could delay in securing funds and subsequently project start					
32	18th July	Local highway changes as a result of road reclassification	8	£ 170,000	None, for link road construction		Deliver necessary changes to corridor, prior to road reclassification			
33	25th July	Business cases for funds are not successful. Risk of clawback of the LEP contribution as a result of delay in housing delivery.	10	not apportioned at this stage			The project does not proceed as planned until other funding sources are secured			

**To be reviewed and updated as part of the Risk Assessment Workshop**