

Impact

	Min	Exp	Max
1	25000	50000	75000
2	100000	125000	150000
3	175000	200000	225000
4	250000	275000	300000
5	325000	350000	400000

PROBABILITY		5	10	15	20	25
75%	Almost Certain	5	8	12	16	20
50%	Likely	4	6	9	12	15
25%	Possible	3	4	6	8	10
10%	Unlikely	2	3	4	6	8
1%	Rare	1	2	3	4	5
	IMPACT	Insignificant	Minor	Moderate	Major	Catastrophic
Colour Key		1	2	3	4	5
CRITICAL RISK	Cost	<£25-75K	£100k to £150k	£175k to £225k	£250k to £300k	£325k to £400k
HIGH RISK	Time	<2weeks	2 to 8 weeks	8 to 16 weeks	16 to 24 weeks	> 24 weeks
MEDIUM RISK	Quality					
LOW RISK	Reputation	Criteria to be decided	Criteria to be decided	Criteria to be decided	Criteria to be decided	Criteria to be decided

Broughton Bypass Risk Register

New Risk No	Description	Risk Owner	Risk Type	Example/Consequence	Comments/Mitigation	Impact	Prob	Prob %	Risk	Time (weeks)	Approx Quantification Output			Amendments from previous revision		
											Min. Cost (£k)	Expected Cost (£k)	Max Cost (£k)		P x Min	P x Exp
Land and Legal																
Legal																
	Compulsory Purchase Order (CPO) / Side Roads Order (SRO)	LCC		Objections could lead to public enquiry. Outcome could delay start of scheme or stop it completely.	Seek to agree the acquisition of interests in land under CPO & continuing rights for SUs under SRO	3	4	50	12		175000	235000	470000	87500	117500	235000
	Judicial review	LCC		Delays start	Ensure all statutory processes carried out correctly.	4	2	10	8		250000	275000	300000	25000	27500	30000
	Legal Challenges	LCC		Legal challenges from campaign groups/ protesters - potential legal costs and delayed start time.	Seek to agree mitigation measures with objectors & ensure that there are no grounds for a legal challenge.	3	2	10	6		175000	200000	225000	17500	20000	22500
	Agreeing items with landowners	LCC		Agreements may need to be made with landowners for access or works to be carried out within or near their land - may take time depending on their compliance/ could incur costs.	Early negotiations with landowners already started.	2	2	10	4		100000	125000	150000	10000	12500	15000
	CPO decision delayed and falls in the window when work cannot start due to ecological restraints.	LCC		If decision comes in Feb-August work cannot start on site clearance due to bird nesting season. Could cause a 7 month delay	CPO/SRO submitted in accordance with programme to allow sufficient time for decision making process - 4% inflation delay	5	3	25	15		325000	235000	470000	81250	58750	117500
Land and Landowners																
	Environmental constraints - lack of ENV constraints plan	LCC		Near to residential dwellings, potential to create dust, access for plant etc. - May lead to disruption/ problems occurring due to ENV restraints.	Detail any constraints within contract documentation.	2	1	1	2		100000	125000	150000	1000	1250	1500
	Unforeseen issues from adjacent land/ landowners	LCC		May be issues regarding access/ legalities regarding adjacent land/ landowners - cause delays and costs	Early discussions with landowners	2	2	10	4		100000	125000	150000	10000	12500	15000
	Opposition to the scheme	LCC		Campaign groups, local residents, protesters est. - may cause obstructions delaying start also incurring costs.		3	1	1	3		175000	200000	225000	1750	2000	2250
	Land/ property value increase	LCC		Cost of land/ property increases	Robust land interest valuation	3	3	25	9		36113	687205	1338292	9028.25	171801.25	334573
	Part 1 claims	LCC		More/ larger claims than expected - Budgets inadequate	Robust land interest valuation	2	3	25	6		0	30100	60200	0	7525	15050
Strategic																
	Political support	LCC		Support from local councillors/ MP's est - Councillors may fight against it, influencing the public, potential delays and costs incurred		4	1	1	4		250000	275000	300000	2500	2750	3000
	Major scheme business case to support funding from LEP/TFL	LCC		Delay in providing the business case may undermine CPO inquiry evidence.	The anticipated delivery of a value for money statement by December is expected to mitigate any concern over value for money. Alternative funding sources already available.	2	4	50	8		100000	125000	150000	50000	62500	75000
		LCC		Business case statement is insufficient to justify scheme	Initial indications are that the VFM will be very good and therefore should not present any difficulties. Alternative funding sources are already available.	2	2	20	4		100000	125000	150000	20000	25000	30000
Design Baseline																
	DMRB revisions	LCC		Updates may be made during detailed design stages - Changes may have to be made/ will take time and increase design cost		2	1	1	2		100000	125000	150000	1000	1250	1500
	Topo survey anomalies	LCC		Confusion/ inability to produce detailed design - Times delays/ increased cost		2	1	1	2		100000	125000	150000	1000	1250	1500
	Late information from 3rd parties	LCC		Essential information not received - Cause time delays and potential increase re-design costs		3	2	10	6		175000	200000	225000	17500	20000	22500
Engineering: Roads																
	Alignment Detailed design															

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	Design errors		LCC		General design errors, calculations/ incorrect measurements could cause errors - Incur delays due to rectifying errors, potential financial implications		2	3	25	6		100000	125000	150000	25000	31250	37500	
	Drainage	Existing land drains	LCC		Unknown existing land drains expected to be encountered. Design work required to pick up into new systems	Will have to be dealt with as discovered on site during construction.	2	3	25	6		100000	125000	150000	25000	31250	37500	
	Drainage	Foul system (Durton Lane)	LCC		Existing foul outfalls from properties being investigated. Solution to be agreed with landowners. Cost implication.		4	2	10	8		250000	275000	300000	25000	27500	30000	
	Drainage	33 Inch aqueduct (possible cover issue)	LCC		Possibility to cause highway drainage re-design	Seeking agreement with UU for proposed works.	4	2	10	8		250000	275000	300000	25000	27500	30000	
	Drainage	EA consent	LCC		Required for outfalls		4	2	10	8		250000	275000	300000	25000	27500	30000	
	Works to 'cut off' section of A6 to be designed and agreed with interested parties.		LCC		Prolonged discussions will incur additional cost		2	3	25	6		100000	125000	150000	25000	31250	37500	
	Significant variation in tender price vs estimate due to upturn in economic climate		LCC		Rework to agree price - Delay in works		2	2	10	4		100000	125000	150000	10000	12500	15000	
	Third party fees (supervision / processing)		LCC		EA/ NE, etc.		2	2	10	4		100000	125000	150000	10000	12500	15000	
	Inadequate notice of road space booking		LCC		Other scheme has priority - Delayed start	Pre discussions with Network co ordination and early submission of all notices.	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Stage 2 safety audit		LCC		Additional design work creating additional construction work - Increasing cost and increasing time in design and construction	ST 2 SA to be carried out as soon as detailed design completed so any re-design can be completed before construction stage.	2	3	25	6		100000	125000	150000	25000	31250	37500	
Engineering: Structures																		
Structures Detailed Design																		
	Checks of 3rd party designs		LCC		Checking of designs from consultants etc. may be incorrect, need further designing - Cause delays, incur costs.		2	2	10	4		100000	125000	150000	10000	12500	15000	
	Design errors		LCC		General design errors, calculations/ incorrect measurements could cause errors - Incur delays due to rectifying errors, potential financial implications		2	3	25	6		100000	125000	150000	25000	31250	37500	
	Underpass		LCC		Being designed by Jacobs. Risk drainage design may not work & redesign required. Additional cost.		4	2	10	8		250000	275000	300000	25000	27500	30000	
Statutory undertakers																		
	Statutory undertaker design delay		LCC		Delay in design - may cause lengthy delays and cost implications	All utility Companies contacted at design stage and provided with GPR survey and construction plans to minimise risk. Trial holes in critical areas to be dug early in the construction phase to identify potential problems.	3	2	10	6		175000	200000	225000	17500	20000	22500	
	Stats cost greater than estimates		LCC		Inaccurate estimate		2	3	25	6		100000	125000	150000	25000	31250	37500	
	Stats performance delay		LCC		Underperformance for contractors, unforeseen issues/ additional works - Time delay and increased cost	preplanning, and, liaison meeting with Main Contractor to minimise delay	4	3	25	12		250000	275000	300000	62500	68750	75000	
Environment - Landscape and Ecology																		
	Specific management plans		LCC		Management plans for sensitive areas (ponds, woodland, est.) may mean consent/ licences from EA, NE - Time and cost implications	In hand	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Invasive plants		LCC		Invasive weeds like, Japanese Knotweed, Himalayan Balsam est. - Require further works causing delays and incurring costs	Nothing observed during numerous surveys and reports by Jacobs	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Consent from, Natural England, Environment Agency est.		LCC		Potential delays in gaining consent, consent refused - May cause delays or prevent works from starting/ progressing, incurring cost implications.	Pre-submission to NE sought	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Delays due to CPO inquiry lead to need for new bat & newt surveys		LCC		Potential delay to works		3	3	25	9		10000	15000	20000	2500	3750	5000	
	Contractors/ workers may breach licence requirements		Contractor		Finds, works stopped by EA/ NE est. - Cause for delay, cost implications regarding fines and delay	Onus put on Contractors. Close supervision required	4	2	10	8		250000	275000	300000	25000	27500	30000	
	Birds nesting (Timing conflict)		LCC		Ground nesting birds appear on cleared site, birds nesting in trees (due to time of year) - Delayed start, pushing programme back, cost implications on lost time	Trees and shrubs could be removed before works commence if necessary	3	2	10	6		175000	200000	225000	17500	20000	22500	
	Pollution events		Contractor		Site runoff, fuel spills, materials spilt/ lost into watercourse/ and or ground - possibility of find's/ costly clean up/ time delays/ other cost implications	Onus put on Contractors. Close supervision required	4	3	25	12		250000	275000	300000	62500	68750	75000	

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	Failed planting/ seeding	Contractor		Failure to prior/ post mitigation works for wildlife, late orders of large number of plants - Could cause time delays and costs due to reseeded/ replanting	Ensure orders placed in time. Works could be completed during maintenance period.	2	3	25	6		100000	125000	150000	25000	31250	37500	
Archaeology																	
	Unexpected archaeological finds	LCC		Site clearance and/ or excavation may lead to archaeological discoveries - May cause major time delays due to investigation and increase cost due to delay or extra works	Prior consultation and discussions with archaeological experts to determine the size of the risk	2	2	10	2		100000	125000	150000	10000	12500	15000	
Construction/ Contractual																	
	Rerouting of M6 traffic	LCC		Incident on adjacent M6 causes traffic to be diverted off motorway onto A6	Regulate liaison with HA. Contractor to develop an emergency plan to deal with situations.	2	3	25	6		100000	125000	150000	25000	31250	37500	
	Adverse weather risk	LCC		Strong winds, heavy rainfall, flooding est. - Delays to works, loss/ damage to material/ equipment, financial loss and costs	Some adverse weather is to be anticipated and allowed for	3	2	10	6		175000	200000	225000	17500	20000	22500	
	Employer's change and inconsistency in the works information	LCC		Staff leaving, new staff taking on job - may lead to changes due to opinion, misunderstanding est. - Cause of dispute with contractor/ other staff, delays on works and costs due to delays and misunderstandings	records to be kept and consistency of staff were possible	4	2	10	8		250000	275000	300000	25000	27500	30000	
	Restricted working hours	Contractor		Working hours may be restricted due to residential properties limiting the works that can be done at night, causing delays. Possibility to increase number of labours to make up for restricted hours, increased costs.	Accounted for and built into the contract documents	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Access to site for materials/ plant	LCC		Limited access due roads unable to accommodate large/ oversized loads, road safety issues, abnormal loads unable to access site est. - Potential cause for delays if materials cannot be delivered, costs incurred with finding alternative methods of delivering materials.	Site is accessible from the A6 with easy access to Motorway	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Working in close proximity to residential/ private property	LCC		Risk of trespass, encroaching onto private land/ possibility of damage, potential delays and costs regarding despoils	Establish fenced site boundaries early on	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Requirements to maintain pedestrian access through works	Contractor		Public footpaths/ rights of way lead through site - May cause H&S issues, potential for delays and extra costs for accommodating measures	Public footpaths to be diverted or closed as necessary	3	2	10	6		175000	200000	225000	17500	20000	22500	
	Maintain access for livestock/ vehicles to farmland	LCC		Access to farm land may be cut off by works Access will have to be maintained possibly causing a H&S issue, delay, and costs	Liaise with local farmers	2	2	10	4		100000	125000	150000	10000	12500	15000	
	Timely submissions and processing of Traffic Regulation Orders (TRO's) or temporary TRO's	LCC		Late submission/ incorrect submission of TRO's or TTRO/ slow processing of docs - Cause delays to works and potentially incur costs	All necessary Orders to be applied for in good time	1	2	10	2		25000	50000	75000	2500	5000	7500	
	Protester Action	LCC		Protests rally - Damages, delays, costs of delays and damages	Not envisaged	3	1	1	3		175000	200000	225000	1750	2000	2250	
	Vandalism/ Theft	Contractor		Possible theft or damage of materials or machinery - Delays in sourcing replacements, costs regarding loss of material/ machinery and cost or re-ordering/ insurance excess	Site security to be established	2	3	25	6		100000	125000	150000	25000	31250	37500	
	Unforeseen services	LCC		Discovery of services that were not identified by surveys or the statutory undertakers - Delays in discovering owner, possible devotions/ protection works, costs and delays		3	3	25	9		175000	200000	225000	43750	50000	56250	
	Traffic signs, road markings & signals	LCC		Shortage of posts, sign plates, delay in making signs, unforeseen issues in erecting signs on site - Delays to works, costs and time implications		2	3	25	6		100000	125000	150000	25000	31250	37500	
Ground Conditions																	
	Worse than expected ground conditions for structures	LCC		Ground not as expected or survey suggested- Could mean lengthy delays due to redesign and potential further costs incurred with different design or piling methods	Extensive site investigation carried out during design process. Work with contractor to programme earthworks to minimise the effect of weather and to agree working practices.	4	2	10	8		250000	275000	300000	25000	27500	30000	
	Unforeseen ground conditions relating to glacial deposits (Cobbles and boulders in glacial till, Head deposits, Slip surfaces/ fissures, est.)	LCC		Unforeseen deposits/ occurrences of features often found on previous glacial grounds - Cause for delays, extra works and cost implications	Extensive site investigation carried out during design process. Pilling to be used.	4	1	1	4		250000	275000	300000	2500	2750	3000	
	Contaminated ground / contamination greater than expected	LCC		Discovery of contaminated ground or contaminates in ground (Infill ponds, farmland, est.) - Could cause safety issue, lengthy delay dependant on contaminate, cost impacts	Extensive site investigation carried out during design process. Procedures in place and requirements in documents to use if required.	3	1	1	3		175000	200000	225000	1750	2000	2250	
	Soft ground due to bad weather	LCC		Heavy rainfall causes soft ground - Excavations filling with water, falling in, muddy conditions, delays, cost implications		3	3	25	9		175000	200000	225000	43750	50000	56250	

New Risk No	Description	Risk Owner	Risk Type	Example/Consequence	Comments/Mitigation	Impact	Prob	Prob %	Risk	Time (weeks)	Min. Cost (£k)	Expected Cost (£k)	Max Cost (£k)	Approx Quantification Output			Amendments from previous revision
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	Suitability of excavated material for re-use	LCC		Potential that it is unstable, to rocky, to soft est. - Need to bring in other material costing more and delays in sourcing and delivery of material.		3	2	10	6		175000	200000	225000	17500	20000	22500	
Bill of Quantities																	
Financial Processes																	
	Extraordinary material/ fuel price increase	LCC		Various reasons leading to material/ fuel dramatic price increase		3	3	25	9		175000	200000	225000	43750	50000	56250	
	Unexpected rise in insurance costs	LCC		Rise in insurance costs - Higher than expected premiums		2	3	25	6		100000	125000	150000	25000	31250	37500	
	Stage 3 safety audit	LCC		Carried out after completion of works. May identify additional works		2	3	25	6		100000	125000	150000	25000	31250	37500	
TOTAL COST (£k)													£1,284,778	£1,664,576	£2,213,123		