

# Edge Lane West Highway and Environmental Improvement Scheme

## Project Risk Register

VERSION	DATE	PREPARED BY	CHECKED BY	APPROVED BY
1 (for Tender)	27/05/2009	CJF	TMcV	CJF

# Edge Lane West Highway and Environmental Improvement Scheme

## Notes

- 1 This Risk Register has been compiled over a period of years and aims to represent all known and perceived project risks.
- 2 The Risks Identified are not final and additional risks are likely to materialise as the project develops, along with some risks being closed out.
- 3 The Contractor should aim to complete, add to and quantify all known and those perceived risks within the Construction Risk Tab (3.0)
- 4 Any additional methodology / matrix or criteria for evaluating the cost or impact of any risk should be appended to this workbook.
- 5 Tabs 1, 2, 4 and 5 are shown for information purposes only
- 6 This Risk Register, together with any evaluated construction risk will be developed during the ECI period

# Project Risk Register

Project Title	Edge Lane West Highway and Environmental Improvement Scheme	Mouchel Project Manager	Mouchel Project Number	Last Updated
		Chris Founds	760155	Jun-09

## 1.0 Project Lifetime Risks

Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation measures	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Last Review Date	Date closed
1.1		<b>Funding</b>												
1.1.1	LV	Funding shortfall to complete property acquisitions	July'05	H	H	H	Alternative funding bid currently being pursued with HCA	Vision	H	M	H	Ongoing	June '09	
1.1.2	LCC	Major Scheme Business Case is not funded completely by DfT		H	H	H	Reduced scope scheme and look to secure additional funds from ERDF / HCA	LCC	H	M	H		June '09	
1.1.3	2020	Inability to spend within required timescale.	July'05	H	L	M	Working to get realistic timescales for acquisitions, demolitions and construction within the overall programme to complete in 2011	Project Team	M	L	L		June '09	
1.1.4	2020	Reduction in overall ERDF funding of £2.5M will result in shortfall	01-Nov-2005	H	H	H	Bid currently being developed and GONW have confirmed c£2.5M ringfenced for Edge Lane	LCC	H	M	H		June '09	
1.1.5		Revised C4 Statutory Undertakers Estimates currently being sought and may result in increased costs		M	H	H	Contingency allowed for within overall scheme budget for minor increase. Work closely with Stats to ensure economical design and seek to secure relevant LA discounts	Mouchel, LCC	M	M	M		June '09	
1.1.6		Increased Construction Costs following delivery of ECI process and Fixed Price		M	M	M	Contingency allowed for within overall scheme budget but ECI process will aim to achieve the most economically advantageous price. Opportunity for scope reduction or Value Engineering	Mouchel, Davis Langdon	M	L	L		June '09	
1.1.7		Re-kindled community and local business consultation may present additional items onto the Promises Register		M	M	M	Identify all requirements early and log onto Promises Register, with immediate valuation provided	LCC, Vision	M	M	M		June '09	
1.1.8	2020	No orders placed with Contractor to achieve programme requirements and possibility of losing developer agreements	01-Nov-2005	H	H	H	LCC to ensure that developer agreements and capital receipts have sufficient timescale flexibility following completion of the highway	LCC (HMRI)	M	M	M		June '09	
1.2		<b>Property Acquisition</b>												
1.2.1	2020	Failure to provide total vacant possession before construction starts	July'05	M	H	H	Prioritise key acquisitions to enable expedient demolition of priority areas for Utilities and construction work	Eversheds / LV	M	M	M		June '09	
1.2.2	2020	Ability to continue to provide access to non-acquired properties	July'05	H	M	H	Access being discussed with property owners and detailed design undertaken to provide alternative access points where possible - eg School Lane.	Contractor / Keppie Massie	L	L	L		June '09	
1.2.3	2020	Failure to negotiate land purchase	July'05	H	L	M	All properties not owned by Client bodies have been included within the CPO schedule. Ongoing negotiations taking place right up to Public Inquiry to reduce the number of objectors.	Keppie Massie	L	H	M		June '09	
1.2.4	2020	Land requirements insufficient to accommodate agreed scheme	July'05	L	L	L	Sufficient design work undertaken at outline design stage to ensure adequate land take identified for proposals. Changes to design layout kept to absolute minimum thereafter.	Mouchel & Keppie Massie	L	L	L		June '09	
1.2.5	2020	Accommodation works increase over and above previously negotiated properties	July '05	M	M	M	Negotiations well advanced giving time to agree finite changes in scheme details. Meetings organised on a regular basis to identify and resolve issues	Mouchel & Keppie Massie	L	L	L		June '09	
1.2.6	LV	Further challenges during serving of General Vesting Notices	July'05	H	L	M	Advanced consultation to be undertaken coupled with negotiated price or alternative accommodation	Eversheds	H	L	M		June '09	
1.2.7	LV	Lack of decant strategy or alternative accommodation	July'05	H	M	H	LCC to expedite procedures to enable decant strategy to be developed and agreed and suitable LCC housing stock identified early	LCC / Eversheds	M	M	M		June '09	

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1.2.8	2020	Insufficient resources for both conveyancing and managing decant strategy	July'05	H	M	H	Strategy to take into account sequence of demolition and adequate resources to be found by City either in-house or through partners	LCC (HMRI)	L	M	L		June '09	
1.2.9	LV	Demolition costs underestimated either through poor estimating or varied procurement actions ie greater number of contracts.	July'05	L	H	M	Use experienced QS and benchmark costs.	LCC (HMRI)	L	L	L		June '09	
1.3		<b>Outline Planning - Demolition and Development Sites</b>												
1.3.1	2020	Developers have not discharged their conditions and therefore no demolition can commence	July'05	H	M	H	Use development forums to facilitate progress and update Conditions matrix on monthly basis, discharging as many items within Project team control	Vision	M	M	M		June '09	
1.4		<b>Detailed Planning - Edge Lane</b>												
1.4.1	2020	Planning Permission expires in 2010 and start has not been made	July'05	H	L	M	Monitor ECI and acquisition progree through steering groups	Vision	H	L	M	All additional information requested by LCC Planning has been provided.	June '09	
1.4.2	LV	School Lane Planning Permission needs to be reapplied for and has the potential to attract objections or not to be granted by LCC	July'05	H	L	M	Close liaison with Planning Department during submission process and dialogue with affected businesses / community to reinforce previously agreed details of individual accommodation works	2020 & KM	L	L	L		June '09	
1.5		<b>Statutory Consents</b>												
1.5.1	2020	Processing Permanent Traffic Regulation (+TTRO) / Stopping Up Orders in timely fashion aligned to construction programme	July'05	M	M	M	Processing being carried out by personnel experienced in traffic orders within the City, possible issues relating to Objections and how these will be resolved ?	Mouchel, LCC	M	M	M		June '09	
1.5.2		Demolition consents and Section 80 Notices are not obtained timely	01-Nov-2005	M	M	M	Maintain early dialogue with LCC (Ray Murray) to ensure all obligations satisfied	Mouchel, 2020	L	L	L		June '09	
1.6		<b>Section 278 works</b>												
1.6.1	2020	Delays in 278 submission to LCC for checking drawings, design and documentation	July'05	H	M	H	Close liaison maintained between LCC and 2020 Lpool to ensure delivery on programme.	Mouchel, LCC	M	M	M		June '09	Completed by end October 05. Comments from desian check
1.6.2	2020	Design Changes Required or materials and palette not suitable or agreed	July'05	H	L	M	Checking to be carried out by 2020 Liverpool on behalf of LCC. Palette and details have previously been agreed for Edge Lane Central and Drive	Mouchel, LCC	L	L	L		June '09	
1.7		<b>Co-ordination</b>												
1.7.1	LV	Lack of team working and own Agendas being pursued	July'05	H	M	H	Both LCC and Vision to engender team spirit and co-operation with shared responsibilities and ownership. Edge Lane Project Steering Group to keep accountability	LCC, Vision	L	L	L		June '09	

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## 2.0 Design Risks

Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation measures	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Last Review Date	Date closed
<b>2.1 Utilities and Services</b>														
2.1.1	Mou	Inaccurate information affects proposed design and layout	July'05	H	M	H	Radar surveys carried out to specified lengths where planting envisaged. Trial trenches undertaken and all service locations accurately measured. Revisit service details with SAs before and at ECI Stage 1 and engage early in process. Further trial pitting to be undertaken by Contractor prior to start on site to confirm location of tree pits.	Mouchel	H	L	M	Radar surveys complete. Revised C4 Estimates being obtained	June '09	
2.1.2	Mou	Not being informed of Stats own strategic and investment / maintenance and development programmes that could impact on adjacent routes	July'05	M	H	H	Regular dialogue with Stat Authorities through co-ordination meetings with LCC. Any proposed works flagged up at this meeting to be checked with relevant authority.	Mouchel, LCC	M	M	M	In hand but worth noting that not all proposed diversions/works are known to attendees at co-ordination meeting.	June '09	
2.1.3	Mou	Additional Utilities provision required for adjacent development plots that are not known about and affect Utilities proposals and resources	July'05	H	H	H	Co-ordination to be discussed through Council Development Sub-Group and requirements understood	Vision	H	L	M	Bellway and PCT furthest developed in terms of Utilities requirements	June '09	
2.1.4	Mou	Lack of co-operation response due to current level of activity around Liverpool	July'05	H	M	H	Close liaison and planning well in advance	Mouchel	M	L	L	Ongoing	June '09	
<b>2.2 Design Management</b>														
2.2.1	Mou	Failure to meet agreed programme milestones for design delivery before and during ECI period	July'05	H	L	M	Internal design team meetings identifying potential problems well in advance to ensure ability for solutions and production of timely information.	Mouchel	M	L	L	Previous experience of 4 ECI projects along Edge Lane has established sound processes	June '09	
2.2.2	Mou	Failure to agree responsibility for Interface boundaries with developers	July'05	L	M	L	Detailed dialogue between Developers and Mouchel have been productive and will continue through Development Sub Group meetings	Mouchel, Vision	L	L	L	Responsibilities now defined for PCT and Bellway sites. Some site procedures still to detail up. Lines of communication to remain open	June '09	
2.2.3	Mou	Buildability of proposed details	July'05	H	L	M	ECI form of contract selected. Discussions with selected contractors to take place well in advance of final construction details being produced	Mouchel	L	L	L	Build on previous work undertaken by original Framework Contractors and use lessons learnt and best practice from previous phases of Edge Lane	June '09	
2.2.4	Mou	S278 Design approval by LCC throws up significant comments and issues	July'05	H	L	M	Close liaison with LCC to ensure their acceptance of design and materials. Proposals similar to previously approved and completed sections of Edge Lane	Mouchel / 2020	M	L	L	Ongoing discussions. First package due to be sent to LCC w/c 25th July for technical approval checking/approval.	June '09	
<b>2.3 Cost Management</b>														
2.3.1	Mou	Inaccurate Cost Plan estimates - base rates wrong, fluctuations, errors in take off, inadequacy of design detail	July'05	H	L	M	Benchmarking exercise to be undertaken to check base rates. Regular dialogue between Cost Managers and Design team to confirm any initial assumptions.	Mouchel / DL	M	L	L	Benchmarking currently being looked at.	June '09	
2.3.2	Mou	Full effect of changes not taken into account	July'05	M	L	L	Regular agenda item on team meetings to review any changes.	Mouchel / DL	L	L	L	Quality system now in-place	June '09	
2.3.3	Mou	Discount on Stats diversion costs not determined	July'05	H	M	H	Current budget assumes a % discount for advance payment with order. Significant additional cost if advance payment not made. City Council need to take a lead on this as responsibility will be with LCC for placing Orders	Mouchel / LCC	L	L	L	Cash flow has built in payments up front to ensure release of adequate funding at the appropriate times and to mirror DfT funding drawdown.	June '09	

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<b>2.4 Audits</b>														
2.4.1	Mou	Stg 1/2 Safety Audit recommendations that cannot be covered by exception report result in extra work.	July'05	M	L	L	Advice taken on any aspects of design that have an uncertain safety element (eg banners) prior to design being finalised.	Mouchel	L	L	L	Typical details derived for all eventualities. First audit to be done w/c 25th July.	June '09	
2.4.2	Mou	DDA Audit recommendations that cannot be covered by exception report result in extra work.	July'05	M	L	L	Detailed discussions specifically held within design team concerning provision for DDA.	Mouchel	L	L	L	Typical details derived for all eventualities. First audit to be done w/c 25th July.	June '09	
<b>2.5 Interface with Hall Lane</b>														
2.5.1	Mou	Material compatability	July'05	H	M	H	Co-ordination meetings held to ensure compatability and pallet of materials agreed. Sanme Spec to Apply down to first Hall Lane junction	Mouchel / 2020	L	L	L	Meetings held with Detailed Designers (2020 Liverpool)	June '09	
2.5.2	Mou	Phasing of Works and Traffic Management	July'05	H	H	H	Hall Lane due to run in parallel with ELW. Detailed discussions to be held with both Contractors and PM's to ensure compatability of TM schemes.	Mouchel / 2020	M	M	M	Initial consideration given to both Projects but Hall Lane details / programme still fluid until DfT funding confirmed	June '09	
<b>2.6 Materials</b>														
2.6.1	Mou	Pallette of materials not agreed by LCC or significant scope reduction required to fit budget	July'05	H	M	H	Detailed discussions ongoing with LCC to ensure compatability through 278 process and with Supply Chain to ensure ongoing product availability, as delivered under previous phases	Mouchel	L	L	L	Ongoing	June '09	
2.6.2	Mou	LCC approval of street lighting equipment, banners, specials and artwork delays supply chain orders	July'05	M	M	M	Close liaison with LCC and Enterprise to ensure their acceptance of selected materials prior to Formal submission for approval, as demonstarted under EL1, 2 and Drive	Mouchel	L	M	L	Agreement reached on proposed columns and luminaires as previous phases of Edge Lane	June '09	
2.6.3	Mou	Procurement methodology for artwork and public square high quality paving and streetscape elements	01-Nov-2005	M	M	M	Schedule and spec to be agreed with LCC Planners and discussions with supply chain. Alternative materials considered undr PRIF work	Mouchel	M	M	M	Ongoing	June '09	
<b>2.7 Demolitions</b>														
2.7.1	Mou	Phasing of Demolition Strategy	June '09	M	M	M	Demolition strategy agreed with LCC and 2020, along with phasing of works areas to accommodate highway	Mouchel	M	M	M	Ongoing dialoguie through Sub Group to ensure consistency	June '09	
2.7.2	Mou	Responsibility for Highway affected property demolitions	June '09	M	M	M	Ongoing discussion with LCC through Sub Groups	Vision / LCC	M	M	M		June '09	
2.7.3	Mou	Out-of-date Information relating to Status of current properties and surveys completed to-date	June '09	M	M	M	Schedule of property status compiled and under weekly review by 2020 Building Surveyors	2020 Liverpool	M	M	M	Additional asbestos and HAZ surveys will be required before demolition commences	June '09	
2.7.4	Mou	Uncompleted Property Services Disconnections	June '09	H	H	H	Ongoing dialogue with Utilities companies through Building Surveyors	2020 Liverpool	M	H	H	Ongoing. Big Risk that if propoerties are not completed and fully disconnected then possible delay to programme	June '09	
2.7.5	Mou	Palanning permission not obtained for demolition areas, restricting what can be demolished when	June '09	M	M	M	Ongoing discussion with LCC Planners regarding extension to current agreement	Mouchel / Vision	M	M	M	Ongoing, alternative options being considered	June '09	
2.7.6	Mou	Insufficient working space to undertake demolitions	June '09	M	L	L	Contractor to consider carefull phased approach and plan during ECI process	Contractor	L	L	L	Initial discussion with framework demolition contractors suggest no-issues	June '09	
<b>2.8 Site Remediation Works</b>														
2.8.1	Mou	Site Investigations incomplete or not started	June '09	M	M	M	Mouchel now commissioned to undertake full SI Stg 1 and 2 of complete CPO area to cover all property demolition areas and proposed highway construction	Mouchel	M	L	L	Works to be completed by Aug 09	June '09	

# Project Risk Register



Davis Langdon



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## 2.0 Design Risks

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2.8.2	Mou	Remediation works not agreed with Environment Agency and LCC	June '09	M	M	M	Outcome of SI will identify proposed approach. Early discussion taken place with LCC.	Mouchel / LCC	M	M	M	Ongoing	June '09	

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## 3.0 Construction Risks

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<b>3.1 Design</b>																
3.1.1	Mou	Insufficient or incomplete design elements	July05	M	M	M	ECI process should aim to eliminate these and ensure all details are provided and accounted for	Project Manager	M	L	L				June '09	
<b>3.2 Programme</b>																
3.2.1	Mou	Delay in placing orders by LCC for any stats diversions which causes prolonged construction period and phasing issues	July05	H	M	H	Funds released in advance of construction to facilitate placing of orders. Close monitoring of programme for each package, with liaison and co-ordination of utilities	Project Manager	M	M	M				June '09	
3.2.2	Mou	Delay in placing Order for the works with the Contractor and knock-on effect to Utilities work	01-Nov-2005	H	H	H	Consider alternatives to enable early Stats Work to be undertaken, Possibility that Contractor could underwrite Utilities costs ?	Contractor	H	M	H				June '09	
3.2.3	Mou	Poor co-ordination and management of Utilities performance on-site	02-Nov-2005	H	H	H	Close Liaison and dedicated Utilities Co-ordinator for all stats works	Contractor	H	M	H				June '09	
3.2.4	Mou	Procurement of materials and lead in times	July05	H	M	H	Contractor to engage supply chain in sufficient time and during ECI process.	Contractor	M	M	M				June '09	
3.2.5	Mou	Overrun of ECI Programme or incomplete ECI process leading to delayed start	01-Jun-2009	H	M	H	Agree suitable programme and manage costs and timescales to milestones	Contractor and Project Manager	M	M	M				June '09	
<b>3.3 Disputes and claims</b>																
3.3.1	Mou	Late issue of instructions	July05	H	L	M	Site procedures to be defined by Contractor and regular design reviews to be undertaken.	Project Manager	M	M	M				June '09	
3.3.2	Mou	Early Warning and Compensation Event Cost and Programme Management	July05	H	M	H	System to be established such that financial and cost management risk of un-liabilited costs is minimal and forecasts are accurate	Contractor and Project Manager	M	M	M				June '09	
<b>3.4 Site Management and Security</b>																
3.4.1	Mou	Site security - vandalism to plant, materials and site offices	July05	H	H	H	Ensure availability of suitable site compound area and 24hr security	Contractor	M	M	M				June '09	
<b>3.5 Health &amp; Safety Performance</b>																
3.5.1	Mou	Accident or injury to site personnel causes delay or claims	July05	M	M	M	Suitable Construction H&S Plan in place together with site safety procedures. Continuous monitoring and regular tool box talks.	Contractor	L	L	L				June '09	
3.5.2	Mou	Accident or injury to general public - either pedestrian or through road traffic accident	July05	L	M	L	Suitable Construction H&S Plan in place together with site safety procedures. Continuous monitoring and regular community liaison and publicity.	Contractor	L	M	L				June '09	
<b>3.6 Liquidation / insolvency</b>																
3.6.1	Mou	Contractor	July06	H	H	H	Contractor selection process will identify suitable companies and check financial standing	LCC	M	L	L				June '09	
3.6.2	Mou	Supply Chain	July07	H	M	H	Contractor to ensure supply chain protection and contingency plan when placing single supplier orders. All S/C's to be pre-approved by PM.	Contractor	M	M	M				June '09	
<b>3.7 Adverse weather</b>																
3.7.1	Mou	Suspension of Works during heavy rainfall or cold periods; inadequate protection to finished works, flooded excavations etc	July05	M	M	M	Contractor to take necessary protection to completed works. Programme to have built in allowance for some adverse weather.	Contractor	L	M	L				June '09	
3.7.2	Mou	Implications of Traffic Management on Winter Gritting Routes and who takes responsibilities for both footway and carriageway areas.	01-Nov-2005	M	M	M	Contractor to undertake close liaison with Enterprise to ensure that Winter maintenance is maintained through roadworks	Contractor	L	M	L				June '09	
<b>3.8 Quality Failure</b>																
3.8.1	Mou	Poor quality materials - delay due to rejection of materials	July05	H	M	H	Sources of materials checked and from reputable companies. Advance ordering in bulk to ensure consistency and availability. Site checks to be undertaken at Suppliers Depot.	Contractor	M	M	M				June '09	
3.8.2	Mou	Poor quality workmanship	July05	M	H	H	Selection of contractors will review quality and workmanship control Full time supervision on site to check quality. Test Panels will be completed in advance of progressing large areas.	Contractor	M	M	M				June '09	
<b>3.9 Delay to Works</b>																
3.9.1	Mou	Late re-opening/removal of Traffic Management from the highway	July05	H	M	H	Traffic management strategy to permit long term lane closures and on/off daily. TM arrangements to be agreed by Police/LCC/Enterprise.	Contractor	M	M	M				June '09	

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3.9.2	Mou	Interface with adjoining contracts causes delays to completion/start of work phases eg Hall Lane interface.	July'05	H	H	H	Ensure liaison between adjacent contracts with effect of construction programmes considered in initial phasing plans. Regular site meetings to be held.	Contractor	L	M	L				June '09	
3.9.3	Mou	Delayed completion of the Works	July'05	H	H	H	Tight supervision, programme monitoring and seeking recovery plan from Contractor at early stage rather than later in Contract. Provision for LD's in Contract	Contractor	M	M	M				June '09	
3.9.4	Mou	Impact of major events	July'05	M	M	M	Contractor to liaise with traffic management group and LCC to ensure any major event is planned for and incorporated into programme.	Contractor	L	L	L				June '09	
3.9.5	Mou	Late materials delivery	July'05	H	M	H	Sources of materials checked and from reputable companies. Advance ordering in bulk to ensure consistency and availability.	Contractor	M	M	M				June '09	
<b>3.10 Change management</b>																
3.10.1	Mou	Client instructed change	July'05	H	M	H	Detailed design signed off by Client. Accommodation works finalised after Public Inquiry and before ECI commences. Implications of any change thoroughly reviewed before any commitment to change.	LCC	M	M	M				June '09	
3.10.2	Mou	Change arising from errors in design	July'05	H	L	M	Thorough check undertaken at end of detailed design stage. Safety Audit stage 2 undertaken prior to design sign off.	Mouchel	L	L	L				June '09	
<b>3.11 Unforeseen risks</b>																
3.11.1	Mou	Uncharted and unknown services	July'05	H	H	H	Radar surveys carried out to specified lengths where planting envisaged. Trial trenches to be undertaken and all service locations accurately measured. Revisit service details with SAs at ECI stage. Further trenching to be undertaken by Contractor prior to start on site to confirm location of proposed tree pits and to identify ALL existing services	Contractor	M	M	M				June '09	
3.11.2	Mou	Statutory Undertakers diversions - delays in performance; estimated timescales unrealistic; cost overruns	July'05	H	M	H	Advance liaison and programming with stats. Orders placed in time and firm commitment on lead in times. Detailed interface between Construction programme and stats agreed at start of construction contract.	Contractor	M	M	M				June '09	
3.11.3	Mou	Statutory Undertakers repairs and planned maintenance works interfere with construction programme. (Note this could be on any traffic diversionary route)	July'05	H	M	H	Liaison with Stats. Co-ordination meetings during construction period between Stats/ Police / Contractor / LCC Works programming committee.	Contractor	M	M	M				June '09	
3.11.4	Mou	Contaminated ground	July'05	H	H	H	High probability relates to specific contamination which may be found at the petrol station site and detailed specification will be included to deal with this known problem. Desk top study has not revealed any historic land use problems. GI and SI underway which will provide level of detail on required remediation. Procedure for dealing with contamination to be agreed with LCC, EA and Contractor(s).	Contractor	M	M	M				June '09	
3.11.5	Mou	Excessive hard dig / breakout	July'05	H	L	M	Construction of existing road to be determined prior to contract award. Contractor to undertake trial trenches as part of utilities check therefore detail of construction can also be noted. Potential for hard dig in areas of demolition clearance - sufficient allowance to be made.	Contractor	M	L	L				June '09	
3.11.6	Mou	Buried structures (tram rails, etc)	July'05	L	H	M	Road alignment designed either to follow existing kerb lines with minimal excavation or to extend outside existing kerb lines again with minimal excavation. Likelihood of encountering tram rails only where drainage required.	Contractor	L	L	L				June '09	
3.11.7	Mou	Bituminous laminations after planing	July'05	M	M	M	Cores being taken to determine existing pavement construction. Overplaning may be required which would result in only small cost increases.	Contractor	L	L	L				June '09	
3.11.8	Mou	Old Stats Trenches that require reinstatement before surfacing	July'09	M	M	M	Review historic records and identify existing problem areas	Contractor	M	M	M				June '09	
3.11.9	Mou	Unexploded bombs	July'05	H	L	M	No major excavations. All land in regular use since war therefore likelihood of bombs low.	Contractor	M	L	L				June '09	

# Project Risk Register

Project Title	Edge Lane West Highway and Environmental Improvement Scheme	Mouchel Project Manager	Mouchel Project Number	Last Updated
		Chris Founds	760155	May-09

### 3.0 Construction Risks

Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation measures	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Contractors Risk Evaluation (£)	Contractors Comments	Last Review Date	Date closed
3.11.10	Mou	Additional working requirement for night time and weekend shifts in sensitive areas to minimise traffic management impact	July'05	H	L	M	Sufficient allowance in programme, phasing and planning to be allowed for	Contractor	M	L	L				June '09	
3.11.11	Mou	Police suspension of works	July'05	M	L	L	All traffic management agreed beforehand and Contractor to ensure compliance with agreed layouts. Police to attend monthly progress meetings	Contractor	L	L	L				June '09	
<b>3.12 Environmental</b>																
3.12.1	Mou	Noise	July'05	M	M	M	Stated levels to be agreed with EHO and Contractor to take necessary steps to ensure these levels are adhered to by using silenced equipment etc. Contractor to work within agreed working day/week	Contractor	L	L	L				June '09	
3.12.2	Mou	Dust	July'05	M	H	H	Limited activity creating dust. Monitor conditions and have suppression (damp down etc) available to remedy problem.	Contractor	L	M	L				June '09	
3.12.3	Mou	Vibration Damage	Nov'05	M	L	L	Need to carefully consider adjacent properties and structures and ensure appropriate propping as required, nearby excavations	Contractor	L	L	L				June '09	
3.12.4	Mou	Timescales for Tree removals and pruning	Nov'05	M	L	L	Close liaison with LCC tree officer and all timescales to accord with legislation and be agreed by LCC	Contractor	L	L	L				June '09	
3.12.5	Mou	Ecology, Bats and Other Fauna and Flora	Nov'05	M	M	M	Full habitat check to be undertaken in advance of works and agreed with LCC Conservation and Ecology Officers, to ensure no adverse impact by proposed works	Contractor	M	M	M				June '09	
3.12.6	Mou	Japanese Knotweed	Nov'05	M	M	M	Checks to be undertaken and mitigation plans in-place for eventuality	Contractor	M	M	M				June '09	
3.12.7	Mou	Demolition Arisings	July'09	M	L	L	Ensure sheeting system for transport and dust suppression during crushing	Contractor	L	L	L				June '09	
<b>3.13 Approvals and Licences</b>																
3.13.1	Mou	Failure to secure provisional or early orders.	July'05	M	L	L	ECI form of contract will enable contractor to appreciate at an early stage what will be required. Close liaison required between Contractor and LCC.	Contractor	M	L	L				June '09	
3.13.2	Mou	Stage 3 Safety Audit identifies additional works	July'05	M	M	M	Contingency and timescales to allow for minimal additional works. Stage 3 Audit to be undertaken in advance of issuing practical completion	Contractor and Project Manager	M	L	L				June '09	
3.13.3	Mou	Delays in getting LCC approval for demolitions	July'05	H	M	H	Contractor to undertake early discussions with supply chain and come forward with detailed methodology to satisfy LCC Building Control Team	Contractor	M	M	M				June '09	
3.13.4	Mou	Delays in obtaining EA approval for remediation works to Petrol Station	July'05	H	M	H	Contractor to work with supply chain to establish protocols and agree with EA. To be developed further during ECI period	Contractor	M	M	M				June '09	
3.13.5	Mou	Delays in obtaining Listed Building / Conservation Officer approval for accommodation works materials and workmanship	July'05	H	L	M	Contractor to engage Conservation Officer early and undertake trial panels in advance	Contractor	M	L	L				June '09	
3.13.6	Mou	Delays in obtaining waste management and transfer licences for demolition arisings	July'05	H	L	M	Contractor to make sufficient allowance in programme and commence negotiations early	Contractor	M	L	L				June '09	
3.13.7	Mou	Delays in TM approvals from LCC for TTRO's / footway closures and tie in works	July'05	M	M	M	Early Liaison with LCC Network Management Team and development of TM drawings during ECI process	Contractor and Project Manager	M	M	M				June '09	

# Project Risk Register



Davis Langdon



Project Title		Mouchel Project Manager					Mouchel Project Number		Last Updated					
Edge Lane West Highway and Environmental Improvement Scheme		Chris Founds					760155		May-09					
4.0 Third Party Risks														
Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation Measures Proposed or In-place	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Last Review Date	Date closed
4.1	DL	Fluctation in material prices during pricing	July'05	M	M	M	Cost estimates recognise the effect of this. An increased contingency figure has been included to take into account the likelihood of increased prices across Liverpool though inflated labour costs.	DL	M	L	L	Ongoing and to be reviewed during ECI period	June '09	
4.2	DL	Availability of labour - number of nearby construction contracts taking place in Liverpool	July'05	M	M	M	Appointed Contractors to ensure continuity of workforce and create new employment opportunities. Main Contractors will source from local established supply chains. Contingency also makes allowance for increased labour costs.	Contractor	M	L	L	Review closer to ECI period	June '09	
4.3	Mou	Complaints from the Public during construction works	July'05	L	H	M	Contractor to have planned liaison with local community and to employ Public Liaison Officer. TM arrangements and pedestrian diversion routes to be	Contractor	L	L	L	Coherent structured Communications strategy required with excellent local dialogue	June '09	
4.5	Mou	Protestor action following serving of GVD final notices of property possession	July'05	M	M	M	Procedures to be considered in advance by Vision, Contractor and site supervisory teams. Local community to be kept informed in advance of progress of works and any pedestrian diversions etc to be publicised and well signed. Traffic management proposals to be agreed in advance and affected persons notified.	Contractor / Vision / LCC	M	M	M	Potential delay but advanced communications and negotiations ongoing	June '09	
4.6	Mou	Delays to programme and effect on TM due to Event Management	June'09	M	M	M	Close co-ordination with LCC and Mpol throughout contract	Contractor	L	M	L	Ongoing and to be reviewed during ECI period	June '09	
4.7	Mou	Developer Interfaces on plots being developed adjacent to highway works and requirement for access, etc	June'09	M	M	M	Close liaison required through Development sub-group	Contractor	M	M	M	Ongoing and to be reviewed during ECI period	June '09	

# Project Risk Register

Project Title	Edge Lane West Highway and Environmental Improvement Scheme	Mouchel Project Manager	Chris Founds	Mouchel Project Number	760155	Last Updated	May-09
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## 5.0 DfT Business Case

Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation measures	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Last Review Date	Date closed
5.1														
5.1.1	Mou	National or Regional strategies change	23-Jun-2009	H	M	H			H	M	H		June '09	
5.1.2	Mou	Other projects or schemes emerge that affect or change the strategic fit of the scheme	23-Jun-2009	M	H	H	Main scheme that could have an impact is Hall Lane, this has been included within the traffic model, and options testing has included the different options. No other schemes would have such a massive impact on the project.		L	H	M		June '09	
5.2		<b>Modelling</b>												
5.2.1	Mou	Inadequacy of traffic modelling data	23-Jun-2009	H	H	H	Build foundations of a solid case for justification for any of the data already collected, prepare for any questioning by DfT, and have good justifications for problems and unrepresentative data	2020	H	M	H		June '09	
5.2.2	Mou	Inability to re-run traffic model (if required)	23-Jun-2009	H	M	H	Model can be re-run at anytime dependant on the data needed and time frames to collect, presentations can be performed manipulating the random seed in the model	2020	M	L	L		June '09	
5.2.3	Mou	Justification for not doing Variable Demand Modelling	23-Jun-2009	H	H	H	elasticity test is being formulated to present an argument either way. A good argument for not performing variable demand is achievable, even if elasticity test indicates it needs to be done	2020	H	M	H	Variable demand modelling case is being constructed and will produce results 29/06/09	June '09	
5.3		<b>Nata Appraisal</b>												
5.3.1	Mou	Changes in Nata Guidance		L	L	L	Guidance studied and understood, will not affect any of the MSBC for this year	2020	L	L	L		June '09	
5.3.2	Mou	Requirement for re-working of economic appraisal and NATA	23-Jun-2009	M	M	M	program built around the NATA appraisal so even if a delay occurs due to time constraints in relation to environmental assessment, delays can be absorbed in overall programme	2020	M	M	M		June '09	
5.3.3	Mou	Delay with Noise Calculation from external consultants	23-Jun-2009	M	M	M	liase with external consultants over time frames for completing the noise calculations when initial contact is made	2020/external consultant	M	M	M		June '09	
5.3.4	Mou	Air Quality calculation delay with external consultants	23-Jun-2009	M	M	M	have rellevant traffic data from the models ready for external consultants to feed into updated model	2020/external consultant	M	M	M		June '09	
5.3.5	Mou	Ecology delay with time periods of when ecology analysis can be performed	23-Jun-2009	H	M	H	confirm what months are suitable for ecology report to be commissioned when initial contact with extrnal client is made, draft into the program.	2020/external consultant	M	M	M		June '09	

# Project Risk Register

Project Title	Edge Lane West Highway and Environmental Improvement Scheme	Mouchel Project Manager	Mouchel Project Number	Last Updated
		Chris Founds	760155	May-09

## 5.0 DfT Business Case

Risk ID	Entry by	Risk (description)	Date Raised	Impact	Probability	Project Severity	Mitigation measures	Ownership	Adjusted Impact	Adjusted Probability	Adjusted Severity	Status	Last Review Date	Date closed
5.3.6	Mou	Delay with Accident calculations	23-Jun-2009	M	M	M	Perform in-house, allocate correct time resources to providing a full accident costing	2020	M	M	M		June '09	
5.3.7	Mou	AST, delayed by individual components	23-Jun-2009	H	H	H	Individual elements to be kept under check, any slip or delay of any individual component is to reported and delay drafted into the program or reallocation of resource	2020	M	M	M		June '09	
5.4		<b>Funding</b>												
5.4.1	Mou	Failure to secure Council commitment to fund their contribution to the scheme	23-Jun-2009	H	L	M	Submit Committee Report as soon as possible to obtain initial commitment and follow up with subsequent reports to retain ongoing commitment	LCC	H	L	M	If costs go above QCE then LCC will need to contribute. Important to confirm likely scheme costs asap and certainly before submitting MSBC for Conditional or Full Approval	June '09	
5.4.2	Mou	Failure to secure confirmation of RFA commitment to scheme	23-Jun-2009	M	L	L	Council to request formal confirmation of RFA support - continue to submit quarterly reports	LCC	M	L	L		June '09	
5.4.3	Mou	Value of Capital Receipts impacting Economics	23-Jun-2009	H	L	M	Development agreements still being finalised and will need to be fed back into economics when available. Unlikely to have significant impact due to generally low market	LCC	H	L	M		June '09	
5.5		<b>Buisness Case</b>												
5.5.1	Mou	economics / BCR Value not high enough to obtain funding	23-Jun-2009	H	M	H	It is anticipated that a BCR Value should be obtained which is in the category for achieving "most if not all" schemes to receive funding	2020	H	L	M	Initial BCR value calculated, awaiting approximation of costs	June '09	
5.5.2	Mou	Final Costs to be fed into TUBA	23-Jun-2009	H	H	H	Approximation of final cost to be obtained as soon as possible so complete MSBC can be drawn up.	2020	H	M	H	Awaiting approximation of costs from ECI process	June '09	
5.6		<b>DfT Approval</b>												
5.6.1	Mou	DfT Approval/feedback period for LMVR, Forecast and Economic review	23-Jun-2009	H	H	H	built into the program for a 2 month delay, delays longer than this possibly could be accomodated	DfT	H	M	H	Initial consultations complete, Yet to Submit LMVR	June '09	
5.6.2	Mou	DfT final approval for MSBC submission	23-Jun-2009	H	H	H	3 months has been allocated for final approval, further delay may be able to be accomodated within the overall programme	DfT	H	H	H	Yet to submit MSBC	June '09	
5.6.3	Mou	Formulation of answers to questioned proposed by DfT, or further modelling work required to answer the questions	23-Jun-2009	H	H	H	The time spent answering questions raised by the DfT in regards to any part of the MSBC / Modelling work is likely to be concurrent with the DfT approval period. Early consultation with the DfT will mitigate this risk.	2020	M	H	H	Initial consultations complete, Yet to Submit LMVR	June '09	

**Edge Lane West  
Highway and Environmental Improvement Scheme  
Risk Evaluation Matrix**

Contractor to  
Insert Value

Pre-determined  
Value

Guidance Notes  
Please Click  
Here

**Time Risk**

Category	Duration Weeks	Cost / Wk
High Impact	2	£0
Medium Impact	1	£0
Low Impact	0.2	£0

**Likelihood**

Category	%
High	60
Medium	40
Low	20

**Impact**

**Likelihood**

**Cost Allowance**

High	High	£0
High	Medium	£0
High	Low	£0
Medium	High	£0
Medium	Medium	£0
Medium	Low	£0
Low	High	£0
Low	Medium	£0
Low	Low	£0

**Cost Risk**

Category	Value %	Construction Value
		£16,000,000
High Impact		£0
Medium Impact		£0
Low Impact		£0

**Likelihood**

Category	%
High	60
Medium	40
Low	20

**Impact**

**Likelihood**

**Cost Allowance**

High	High	£0
High	Medium	£0
High	Low	£0
Medium	High	£0
Medium	Medium	£0
Medium	Low	£0
Low	High	£0
Low	Medium	£0
Low	Low	£0

**Time and Cost Risk**

Category	Value %	Construction Value	Duration Weeks	Cost / Wk	Combined Value
		£16,000,000			
High Impact		£0	2	£0	£0
Medium Impact		£0	1	£0	£0
Low Impact		£0	0.2	£0	£0

**Likelihood**

Category	%
High	60
Medium	40
Low	20

**Impact**

**Likelihood**

**Cost Allowance**

High	High	£0
High	Medium	£0
High	Low	£0
Medium	High	£0
Medium	Medium	£0
Medium	Low	£0
Low	High	£0
Low	Medium	£0
Low	Low	£0