

EDINBURGH TRAM PROJECT

Risk Allocation Report

Current Period End 01-Feb-07

Sim Run P90 1A+1B 53010.73 £k

Total Alloc £k
Phase 1A 47619.38
Phase 1B 5391.34

WBS Item	Allocated Risks	Impact Assessment 08 Feb 2008	Exposure Period	No of Periods	P90 Risk Allocation	Proport	P90 Risk Allocatio	P90 Risk Allocation	Review Comments 8/2/08
7.3 Infraco	48 Two stage tender pricing does not achieve price certainty for works at first stage.	Price certainty is not achieved	Price creep post tender (during pre-construction period). Tender evaluation period exceeds 2 months currently planned. Bidder may attempt to price low at first stage.	12-Jan-07 03-Jan-12	42	6878.53	80	5502.82 1375.71	Potentially increase probability
7.3 Infraco	870 SDS Designs are late and do not provide detail Infraco requires	Infraco does not have detail to achieve contract close without provisional designs	Delay to due diligence and start on site and need to appoint additional design consultants	31-Jan-07 31-Jan-08	3	3905.36	100	3905.36 0.00	No evidence to suggest amending risk - propose amending exposure end date
7.3 Infraco	952 Scope of works relating to Wide Area Modelling (WAM) have not been agreed with SDS because they consider this to be out with the scope of their contract.	Uncertainty about extent of construction works required on road network relating to Wide Area Modelling issues.	Potential claim from SDS to deal with additional design work; Potential construction costs to deal with WAM issues (difficult to quantify without design) over and above those already included.	03-Jul-06 24-Sep-08	12	1962.74	100	1962.74 0.00	No evidence to suggest amending risk
7.3 Infraco	47 Poor design and review processes; cumbersome approvals process; reiterative design/approvals process.	Completion of MUDFA works is delayed (due to late design/approvals) - late utility diversions in advance of Infraco works.	Increase in price and time delay in the Infraco contract; Infraco could end up delay to commencement or with utility diversion and would have to price for or have to carry out unplanned re-sequencing; Claims from MUDFA as a result of being unable to proceed with works.	01-Oct-07 31-Jan-08	3	1752.72	80	1402.18 350.54	No evidence to suggest amending risk - propose amending exposure end date to meet design timetable
7.3 Infraco	70 SDS does not provide its defined deliverables (technical specs) in accordance with the SDS contract. Infraco Proposals not fully considered.	Poor definition of design and Employers Requirements in Infraco tender documents	Creates impact on the Infraco ability to develop its tender - pricing and supply chain. Increase in time for BAFO and increase in costs. Increase in bidder queries.	02-Oct-06 31-Jan-08	3	1238.36	100	1238.36 0.00	No evidence to suggest amending risk - propose amending exposure end date to meet design timetable
7.3 Infraco	931 Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; known redundant utilities; unknown live utilities; unknown redundant utilities.	Unknown or abandoned assets impacts scope of Infraco work	Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	01-Oct-07 31-Jul-10	36	931.57	80	745.26 186.31	No evidence to suggest amending risk
7.3 Infraco	279	Third party consents including Network Rail, CEC Planning, CEC Roads Department, Historic Scotland, Building Fixing Owner consent is denied or delayed	Delay to programme; Risk transfer response by bidders is to return risk to tie; Increased out-turn cost if transferred and also as a result of any delay due to inflation.	03-Jul-06 31-Dec-09	28	860.97	90	774.87 86.10	Geoff to provide update on transfer of consents risk - does this need amending? Value of consents risk needs increasing?
7.3 Infraco	22 Base estimate does not account for presence of hazardous materials on land	Hazardous materials encountered during construction	Additional treatment costs and protective measures	01-Jan-08 31-Dec-10	39	574.04	80	459.23 114.81	No evidence to suggest amending risk - it is understood that this risk remains with tie
7.3 Infraco	1011	Occurrence of any delay caused by Utilities Works, MUDFA Works, breach of Third Party Agreements, Unplanned City Events, New Utilities and/or any other event referred to as a Compensation Event	Delay and additional cost	27-Sep-07 31-Dec-11	42	551.02	95	523.47 27.55	Contractual clause - Geoff to confirm status and value
7.3 Infraco	178 Procurement Strategy novates SDS to Infraco after Detailed Design; Limited input on buildability from Infraco.	Infraco due diligence process reveals that design rework will be required after novation of SDS.	Bids will be higher than envisaged in base estimate as Infraco will price for re-work.	02-Oct-06 31-Jan-08	3	516.58	80	413.27 103.32	Financial impact does not appear sufficient - cost impact requires to be reviewed
7.3 Infraco	132 Realignment of existing road geometry required	Increase in off-route junction improvements, certain junctions requiring realignment of kerbs etc	Increase in design costs.	03-Jul-06 26-Jan-09	16	276.22	80	220.98 55.24	No evidence to suggest amending risk
7.3 Infraco	172 Area of possible contamination and unstable ground (unlicensed tip) has been highlighted during desk study immediately to east of Gogar Burn - investigation for CERT project indicates that this consists of building rubble and domestic waste.	Tramway runs through area of possible contamination and special foundation is required to cope with unstable ground	Increase in costs to provide special foundation solution	01-Jan-07 31-Jul-08	10	261.68	100	261.68 0.00	Advised solution engineered by SDS and allowed for in Advanced Works and Mobilisation costs - Bob Dawson to review and advise if risk can be closed
7.3 Infraco	105 Encountering archaeological finds/burials/munitions during construction	Exhumation of archaeological finds/burials	Delay in construction programme	28-Sep-07 31-Jul-10	36	253.13	90	227.82 25.31	This is in addition to the circa £400k in the provisional sum of the Wiesbaden Deal
7.3 Infraco	318 Failure to make arrangements with Utilities for the phasing of necessary connections; Utility Company operational constraints	Utility connections cannot proceed as planned	Potential delay to start of Infraco works in certain sections	04-Apr-07 31-Jan-09	17	206.43	80	165.15 41.29	Does this risk lie with tie or Infraco? Bob D to confirm
7.3 Infraco	302 Steel shortage due to global demand and ongoing Corus transfer of rail production facility	Delay or price increase due to steel shortage	Long lead times, additional cost due to inflation, programme delay.	26-Apr-07 31-Jan-08	3	205.85	80	164.68 41.17	Does this risk lie with tie or Infraco? Bob D to confirm
7.3 Infraco	66 Infraco and Tram systems not compatible and/or contracts not aligned.	Inadequate system integration	Time delay and interface problems between specialist contractors / sub systems.	01-Nov-07 31-Jan-08	3	185.41	80	148.32 37.08	Does this risk lie with tie or Infraco? Bob D to confirm. If so, impacts need to be reassessed
7.3 Infraco	303 Proximity in time and space to other works within Edinburgh	Third party works in Edinburgh impact on Tram infrastructure construction	CEC may limit the number of workfronts allowed; programme re-sequencing; slower overall construction rate; effective increase in preliminaries; overall programme delay	30-Sep-07 31-Jul-10	36	164.66	80	131.73 32.93	No evidence to suggest amending this risk
7.3 Infraco	173 Uncertainty over extent of contaminated land on route	Tramway runs through area of previously unidentified contamination and material requires to be removed and replaced (dig and dump).	Increase in costs to remove material to special and other tip.	29-Sep-06 31-Jul-10	36	164.84	80	131.87 32.97	Probability of this risk appears too low. Needs to be reassessed

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7.3 Infraco	134 Network Rail possessions over and above that estimate are required	Compensation paid to Train Operating Companies	Increased compensation paid to Train Operating Companies	17	151.75	100	151.75	0.00	Possessions are currently booked. Should this risk be transferred to Infraco post-contract award
7.3 Infraco	115 Network Rail cancels planned possessions	Planned work at interface with Network Rail is delayed	Time delay and resulting cost increase	17	143.15	100	143.15	0.00	Possessions are currently booked. Should impact be reviewed as re-booking possessions could result in significant delay to project
7.3 Infraco	1010	Occurrence of termination or omission of Infraco Works if permission to resume not granted by tie within 6 months	Project suspension or cancellation	42	137.76	80	110.20	27.55	Geoff to confirm if this risk still applies
7.3 Infraco	865 Buildings contain asbestos that was not uncovered during surveys	Asbestos found during demolition works and excavations for construction	Cost and delay during investigation and removal	17	130.11	80	104.09	26.02	No evidence to suggest amending this risk - Infraco are not taking this risk
7.3 Infraco	11 Contractors methodology not adequately assessed	Land required for access to workfront not acquired	Additional management and acquisition costs relating to acquiring land to gain access	16	82.65	80	66.12	16.53	No evidence to suggest amending - A Sim to advise
7.3 Infraco	67 Interface with CEC as roads authority	Roads maintenance is not carried out	CEC is in breach of its statutory duties	1	77.90	80	62.32	15.58	Duncan Fraser to confirm risk
7.3 Infraco	1007	Introduction of alternative Submittal Programme where tie cannot comply with the original programme (not arising from Infraco default)	Delay	42	68.88	100	68.88	0.00	Geoff to confirm if this risk still applies
7.3 Infraco	1003	Failure to liaise with any party, as reasonably required, to produce information required so that the Infraco Works can be progressed properly, according to Programme and in accordance with the Infraco Contract	Delay to project and additional costs	42	68.88	80	55.10	13.78	Geoff to confirm if this risk still applies
7.3 Infraco	1009	Suspension on instructions of ties Representative in circumstances outwith the following: Suspension provided for in the Agreement, Suspension necessary by reason of default of the Infraco, Suspension necessary for the safety of the Infraco Works.	Delay to project	42	68.88	80	55.10	13.78	Geoff to confirm if this risk still applies
7.3 Infraco	103 Delay in design information release from specialist tram manufacturer	Delay in detailing of stops, trackway, OLE etc for Phase 1A	Time delay and consequent costs	14	65.84	90	59.26	6.58	No evidence to suggest amending risk
7.3 Infraco	100 3rd party agreements impact on works not accounted for in estimates/ become apparent during construction	Increase in fencing, walls, screen requirements	Additional construction costs	3	58.03	80	46.42	11.61	No evidence to suggest amending risk
7.3 Infraco	54 Contractor default e.g. insolvency.	Construction bond not available in the event of Infraco default	Increase in cost and programme due to appointment of replacement contractor	42	44.20	80	35.36	8.84	Geoff to confirm if this risk still applies
7.3 Infraco	1006	Failure to comply with the Submittal Programme timescales	Delay and additional costs	42	34.44	80	27.55	6.89	Geoff to confirm if this risk still applies
7.3 Infraco	1013	Indirect Losses sustained in by Third Parties claiming against tie or Infraco or because of third party agreements or land consents	Additional cost	42	27.55	90	24.80	2.76	Geoff to confirm if this risk still applies
7.3 Infraco	205 Network Rail issue new Group and Company Standards during construction. Design and construction is aligned to current Network Rail Group and Company Standards.	Network Rail emerging Group and Company Standards are different at time of construction	New standards require to be adopted resulting in re-design, delay and increased construction cost.	37	20.34	80	16.27	4.07	No evidence to suggest amending risk
7.3 Infraco	68 Interface with Transdev	Supply of commissioning services from Transdev to Infraco.	Delay and costs incurred by Infraco.	17	19.45	80	15.56	3.89	No evidence o suggest amending risk
7.3 Infraco	1012	Occurrence of any referable delay/costs caused by suspension by ties Representative		42	13.78	80	11.02	2.76	Geoff to confirm if this risk still applies
7.3 Infraco	150 Blackspots for radio/mobile communications	Geographic areas where radio/mobile communications cannot obtain signal	Additional remedial equipment required e.g. repeater masts, booster packs etc	16	6.20	80	4.96	1.24	Negligible risk - Bob D to confirm if we need to keep
7.3 Infraco	304 Infrastructure design development e.g. building fixing approvals not achieved as designed	Utilities (diverted by MUDFA or left in place) are found to be in the path of infrastructure works at time of construction	Additional utilities diversions are required to be undertaken by Infraco with additional cost and programme impacts	41	3.41	95	3.24	0.17	Negligible risk - Bob D to confirm if we need to keep

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Risks From Schedule 4 Part 1 Base Case Assumptions (Draft as received from BBS)	Comments
CEC do not permit 'outside of hours' working (outwith the Code of Construction Practise	For discussion with GG
Works required outwith current scope i.e. Victoria Dock and Tower Place bridges and Lindsay Rd	For discussion with GG
Works required below the "Earthworks Outline"	For discussion with GG
Value Engineering reductions are not delivered in full	Wiesbaden Deal contains circa £11m of conditional VE - who makes up any shortfall?
Other Potential Risks	
Unforeseen Ground Conditions	Who is taking this risk? There is no allowance for this risk within the project risk register.
Adverse weather conditions	Who is taking this risk? There is no allowance for this risk within the project risk register