



Revision	Date	Prepared By	Comments
26	25-Jan-05	Mark Bourke	Updated with comments from TET, tie (PAE), tie (OME) and DLA TET comments added. New risks relating to interfaces, revenue, alignment, integration and Regulatory matters added Ref. 180 to 196 tie (OME) comments on risk strategy for ref.5,174,175,30,38,44,70,79,110 and 139 added. New risk ref.179 added. Responsibility for risk mitigation for risks ref.133,106,72,70,38 and 44 transferred from BDB to tie (OME).
			tie (PAE) comments on risk strategy for ref.4,5,6 and 130 added. Likelihood reduced post mitigation on all tie (PAE) risks. Mitigation factor increased on risk ref.4,5,6,34,177 and 130. DLA comments included incorporating revised mitigations, factors and description to risks Ref.20,41,68,71,172,87,95,165,110,142 and 147. New infraco procurement risks added ref.198 to 212 OB Profile Updated to Reflect OB for November 2004
27	22-Feb-05	Mark Bourke	Updated with comments from tie (PM) - risks ref.161, 17, 25 and 26 transferred to tie (UM), risks ref.22,160 and 162 transferred to tie (PRO), and updates to mitigation factors and due dates tie (PAL) mitigation strategy for risks ref.15,16 and 189 updated. tie (PAE) mitigation strategy for risk ref.106 updated and new risk ref.213 added. tie (OME) mitigation strategy for risks ref.175,173,179,44,70 and 72 updated with new risk ref.214 added tie (MAD) new risks ref. 215 and 216 added and mitigation factors and dates for completion updated on all tie (MAD) risks tie (FD) mitigation factors and due dates updated for all tie (FD) risks tie (CFM) mitigation strategy updated for risks ref.86,121 and 132. Mitigation factors and due dates updated for all tie (CFM) risks. MM& FM comments added regarding responsibility from MM & FM to mostly tie responsibility for mitigation in view of impending SDS/TSS commissions. Responsibilites updated and new columns for pricing risak and indicating risk allocation added to Risk Register tie (CM) new risks ref.217 to 221 added
28	03-Mar-04	Anita Salwan	DLA comments on mitigation strategy, secondary responsibility and mitigation factors for risks ref.12,207,25,26,27,202,69,74,199,168,172,87,95,165,110,111,114126,142,147 added. TET new risk ref.222 added tie (DM) new risks added ref.223 to 237 Charts updated Updated to indicate the risk allocation and affected Contracts for consideration in QRA analysis and OBC production.

Updated to allow

A. C.	Timing	Project	Complexity of Contract Late Centractor Inv. Design Poor Centractor Capabilities	Government Guidelines Dispute & Claims Occurred	Information Management Other Procurement Areas	Design Complexity Degree of innevation	Environmental Impact Other Project Specific Areas	Inadequacy of the Bosiness Case Large Number of Stakeholders Funding Availability	Project Management Team Poor Project Intelligence	Other Client Specific Areas Public Relations Sites Characteristics	Permits, Consents & Approvals Other Environmental Areas	Political Remanic Loodaning & Reconstine	Technology Other External Influences	CAPEX	Revenue	Quality Functionality	Approvability Likelihood Lock	Impact No Micgaton 1 to 5 Significance	1 to 25 Likelihood	1 to 5 Impact With Mitigation 1 to 5	Significan ce 1 to 25	Lead Responsibility for Mitigation	Secondary Support for Mixigation	Minigation Strategy	Minigation Factor	Status	Date to be actioned by	Current Litelihood - Probability	Mainaun Rid; Cost (M.)	Most Likely Risk Cost (Ik)	Maximum Risk Cast (Bk) Expected Risk Value (Bk)
Passenger numbers lower than forecast resulting in a dicrease in revenue	Operation	late 1 & 2					1 10	0							0		0 3	3 1	15	3	20	br (FRO)	TEI	Einabhis die antiqueted base model für passenger uurdere, the factors afferting the nodel including reasonal, event und weekend activity. Idensify potential problem areas of revenue projections. Define arrociated acoumptions made including developer up.	0.6	Active	Aug-65	0.88			
2 The inclusion of CETM will impact the project	Planning	Line 1 & 2	+++	+++		++	+	++-	++	++	+++		0	0 0	0		0 .5	5 2	25 4	5.	20	101		Review the potential efficience of CETM with regard to quidity. Review the potential influence of CETM on run-time. From the paper to CBC outlining the background and way forward. Prepare for implementation and inclusion. Prepare for development of a re-	0.1	Active	Jun-04	0.98		_	
programme and ful to complete necessary assessments before	Planning	Line 1 & 2			1 1 2		0								0		5	5 3	25 3	5	15	te (MAD)		Receive the parameter assumptions included with in the model such as growth, butting of gains. Evenew the requirement for an independent review. Review the spill between car and public transport assumptions. Undertake reministry review on parameters to 1	1	Closed	Sep-03	0.60			
submission of STAG to SE 4 Cost increases or programme delays due to planning permission proquements in complying with the design requirements of CEC	Procurement	Line 1 & 2					9	0	H				++	0	0		0 5	3 3	3	5	15	tir (PAE)	MM & FM	Hold regular meetings between the (FD) and CEC Head of Flazing to discuss strategic issues throughout the design development process. Continue to work with the Flazing Authority in the caying development of the Design Massal, achiding going coinster	0.8	Active	Dec-04	0.68			
Planning 7 DPOFA Procurement delayed due to protracted negotiation due to loss Pr	Procurement	Line 1 & 2	0	6		-	+		+++	-	+++	-	++	0	0		. 5	5 3	25 3	5.	15	tie (PRO)		Develop planned negotiation strategy and use competitive process to identify and drive to resolution on key ususes. Maintain resourcing to within the and advisors	1	Closed	Mar-04	0.60		-	
of momentum suparting procurement programme or mability of preferred bidder to close, 8 Insufficient public sector capital available to meet contract price	Planning	Line 1 & 2	-	-				0		-			++			0	0 5	5 3	15 3	5	15	te (FD)	GT	to nuture momentum. Define acceptable level of negotiations to reach by end-March 2004. Commence early known with SE. Establish bass of Enclarg including review of scope, timing, cash Sow, auditing, controls & gateways, limitations, additional	0.5	Active	May-05	0.90		_	
resulting in additional cost charges 9 Shortfall in securing 'other fanding' beyond SE funding for schemes	Planing	Line 1 & 2		+	-	++	+	0					++	•	-	7.52	0 5	5 1	25 3	5	15	tie (FD)	GT	sources. Verify cost index and miliation adjustments. Verify any conditions precedent. Revi Commence early basion with potential private sector funding parties. Establish basis of funding including review of scope, timing, cashillow, auditing, controls &	0.6	Active	May-05	0.76			
resulting in delay to programme O An optimistic runtime analysis feeds into the business case resulting in revenue impacts e.g. the expected priority levels at highway junctions	Operation	Line 1					1 10	0						0	0		0 5	5 3	15 3	5	15	ММ	tie (MAD)	gateways, Imitations, additional owners—contributed land, congention charging, relationed. Undertake early constitution with CEC to confirm the sufficience on the table againing system. Assess potential linear delays and junction delays (lack of transmissions) with the sufficience of the sufficie	0.8	Active	Jun-04	0.68			
not achieved.	Construction	Line 1 & 2	-	++-		++	++			0	++-		++	0 0	0		5	5 3	25 3	5	15	tie (FRO)		Develop Construction Implementation Strategy to assess the need for an advance works contract. Develop project programme and assess the impact to scheme	0.4	Active	Jul-04	0.84		-	
to scheme 2 Bdl authorisation prevented due to loss of political will due to negative Ap	Application for Powers	Line 1 & 2						0						0	0		0 5	5	3	5.	15	tie (FD)		for alternative procurement optoms including advance, during main works and as part of other releases. Beriew the outcome of Countities Reports and Parlamentary debate. Prioritise and develop the further strenges of funding. Develop continuous value engineering of the parlament of the parlamen	8 0.5	Active	Dec-05	0.80			
Lothian Bures	Procurement	Line 1 & 2											0	6	0 0		0 5	5	25 3	্হ	15	tie (PRO)	te (PD)	Engage with Lothum Buses. Continue to work with the Council to examine options on service integration to cover areas of concern including reduction in Lothian. Buses' revenue. Foster a co-operation relationship. Ensure the Council are regularly briefed.	1	Closed	Dec-04	0.60			
in injures successive meteorism in the contraction of the	Centroctes	1me 1 & 2	0											0	0		0 5	5 3	3	5	15	tie (UM)		Review the options available for delivery of scheme and amendanear to delivery date. I densify key utility diversions and required "lead in 'mines. I densify those services that can be left in place. Review need for additional denga mody. Seek verification.	0.2	Active	Oct-04	0.92			
	Procugement Application for	Line 1 & 2	-		0		-	0	+				++	0	0		0 5	5 2	25 3	3	15	tie (FD)	te (FAL)	Protect of setting out criteria for advance purchase has been prepared and agreed with DV and its row to be put to CEC. Develop robust programme for acquisition of duad in advance of commencement of nine works. Identify critical path for acquainton allowing. Megotiation on objections to be prioritized. Objection management strategy and implemented. Objectives are (1) to maximise the number of objectors prepared to	V000	Active	Dec-05 Sep-04	0.76			
	Powers							3						×										withdraw their objection and (2) to generate reacting agreement with major stakeholderstander							
Parliamentary process	Application for Powers	Line 1 & 2					0							0	0		0 5	5 2	3	5	15	tie (OME)		At the Preliminary Stage, the promoter will have to be prepared to respond to specific requests for classification on subjects chosen by the Parliamentary Committee Prepare evidence in reposus to queens. Develop a programme for the preparation of eviden	0.6	Active	Sep-04	0.76			
project credibaty	Planning	Line 1 & 2									0				0		0 5	5 2	25 3	E 1341	12	tie (PRO)	and the latest the	TEL to play energetic and effective role. DLA upod on the establishement of TEL complete.	0.7	Active	Dec-05	0.72			
	Procusement Construction	Line 1 & 2					0	-			0		++		0		0 5	5 3	25 2		10	te (PAE)		Hold regular meetings between the (FD) and CEC Head of Flammag to discuss strategic issues throughout the design development process. Continue to work with the Flammag Authority in the ongoining development of the Design Manial, including going consider. Continue to lause with City Archaeologist and Historic Scotland, especially as Gogarburn. Address this aspect in the Enroyennestal Statement. Carry out desk.	0.8	Active	Dec-05 Dec-04	0.70			
archaeological finds/burials and consequent exhumation.	G 12																	1000						study. Vedestaka perlininany saventgithons to identify possible 'special' sites. Hold meetings		2000	-0.00	4000			
	Planning Application for	Line 1 & 2				0								0 0	100	0 0	0 5	5	2	3	10	te (MAD)		Serview adjectedates model review findings: Consider undertaking independent until of model structure. Undertake sensitivity tests (model parameters, sub-model and data sensitivity, interaction between undemodels, notwork and public transport coding, etc.) Objectsors now received, categories and recorded or database. Inhall review of objectsors (1) to prioritize for the purpose of negotiation with objector and (2)	0.6	Active	Dec-05 Jun-04	0.64			
process	Powers Procurement	Line 1 & 2				0	-	0					++-	0	0	0	3	4	20 4	- 5	20	DLA	tie (PRO)	opposition now recurrence configuration and the second continuous	0.2	Active	Dec-06	0.96			
design or construction then additional costs and programme delays will be potentially incurred 5	7					0.00			\sqcup					2	2						16	tie (PAL)		set ands for each contract for internal management. Develop requirments to minimize need of land take. Review cost assumptions of original costs. Develop robust cost estimates for land and property. Review the			D. of	0.70			
depot	Procugement	Lue I												•							***	ia (Pau)	,,,,,,	overeign produces or instance feet on data safe, reverse con annuagement of regular code. Several process con channels no same any property, across are requirements for specialist lacid and property advances to recommend cost, claims and reliable of	0.5	Active	Dec-04	10.00			
Line 2 Land costs and compensation higher than supercred, moloding depot	Procurement	Line 2						0						0			4	35. 3	3	5	15	tie (PAL)		Develop requirements to minimine need of fands take. Review cost surroughous of original costs. Develop sobust cost estimates for land and property. Review the requirements for specialist land and property advisors to recommend cost, claims and matable c	0.6	Active	Dec-04	0,68			
increased costs	Construction	Line 2						0	Ш	\perp				0			4	35 3	3	: 5	15	Se (U34)		Review procurment options including options for fixed pricing and asserts need for full-time supervision to obviate cost creep. Identify all PU affected by the scheme. Seek to minimize the scope of FU deversions. Define the scope of diversions and modif	0.3	Active	Dec-05	0.74			
	Planning Planning	Ime 1 & 2						0	\square					0 0	0 0		4	5 3	3	5	15	ter (MAD)		Review the quadry of aparts and conjunt from the modelling process and recommend sensitivity analyzes to confirm range of potential outcomes. Review the areas where there may be potential change to scope of Froject. Review the implications of inclinence. Asserts assumptions and basis of notential loss of notencing to Nat Link to Agroost. Review the tensitivity of the scheme to the Rail development. Recommend.	0.7	Active	Oct-05	0.66			
	Procurement	Ime 1 & 2	0										0		0		0 4	3 3	20 3	5	15	DLA	963.	Ameria assimphona and basin of potential loss of patronage to Kai Link to Amyori. Service the sensitivity of the schime to the Kai development. Recommend termination of either project if minual enclosivity in economic terms becomes apparent. Review i Emahath matabit remandion provingian in DPOFA. Include requirement for Operator performance bond. Include recovery of costs for frictional costs and re-	1	Closed	Aug-05 Aug-04	0.60			
procurement process	Construction	Line 2	, M.	-		++	-	0	+++	0 1	-			0			4	35 3	10 3	5	15	te (PRO)		procurement in agreement if Operator default. Define the contagency to be allowed for in the construction costs. Review the potential to transfer this risk to InfraOO. Develop detailed cost estimate. Curry out	0.8	Active	Nov-05	0,64			
22 Lack of integration of the operational impacts of lines 1, 2 & 3 resulting in cost over-runs	Operation:	Ime 1 & 2				0	++	8614	++		1			0	0	0	4	5 3	20 3	5	15	te (PRO)	NM & FM	thorough Buck assessment. Ensure Castry and speciation in contract and design manual. A. Enablish fortugality interface and integration discussion between Line 1, 2 and 3 Project Managers. Maintain close liaison with line 2 and 3 consultants in discussion regarding interfaces, capacity, conflicts, turn back facilities, only centre integrats.	0.6	Active	Dec-04	0.68			
	Procutement	Line 1 8:2								0				0 0	0		4	5	20 3	5	15	te (PRO)	GT	outcuston regarding internaces, capacity, contacts, turn outcir incusies, cry receive integrals. Miniman is competitive process for as long as possible to ensure that financial requirements of bidders are controlled. Undertake analysis of bidders submissions to being transparency to cost build-up.	0 1	Closed	Mar-04	0.60			
M Increased tram vehicle costs incurred (from those allowed in Business Po Case) due to higher spec, legislation or exchange rate	Procurement	Line 1 & 2										0		0			4	5 3	3	5	15	ter (PRO)	MM & FM	Define the contagency to be allowed to potential higher specification allowance, finter legislation or down-ride variation in exchange rate. Develop a detailed specification and gain be sign-off. Hold outline discussions with mainfacturers. Advise on	0.5	Active	Dec-04	0.70			
There are programme delays due to extended utility deversion works	Construction	Line 1 de 2					0							0	0		4	5 3	20 3	5	15	be (U)A)	DLA	Undertake early engagement of PU computers. Review and apprain the programme implication of the works. Review certainty of costes and information available on services. Co-containts determining work with PUs to avoid 10-opting the highway several tim.	0.3	Active	Dec-04	0.74			
Line 1 - Innial PU information is found to be unreliable, resulting in increased costs	Contraction	Lete 1					9	0						0			14	350 00	30	88 786	15	5e (UM)		domains of treebes. Constitution was the constitution of the constitution of the constitution of the constitution. Define the recope of PU determination and modelle above to be carried out. Seek to minimize the scope of PU determination with the constitution of the	0.4	Active	Des-04	0.72			
																											7	1 1			
 Adverse affect on design at LROHeavy Ral Interchange or in running adaptes to Network Ral 	Planning	1.me 1 & 2				0								0 0	0 0	0	0 4	5 5	20 3	5	15	tie (FRO)	DLA	Develop clear interface points for interchange deague. Review the aqualing and immunisation injects to scheme. Review the struct is relation to Dectro- magencic interference. Sold regular interings with Network Rai. Co-ordinate interfaces frough C.	0.2	Active	Dec-04	0.76			
adajcent to Network Ruli Ene 1 - Construction cost over-runs due to planning and client changes C	Planning Construction Construction	Line 1 & 2 Line 1 & 2				0	3	0						0 0	0 0	0	0 4	5 3	20 3	5	15	tie (PRO) tie (PRO)	tie (CM)	Develop clear interface points for interchange dengin. Review the signaling and instrustation injects to scheme. Review the invote is relation to Electromagnetic interfaces: Birdl regular meetings with Network Rail. Co-ordinate interfaces through C. Define the continguagesty to be allowed for in the continuation costs. Review the potential to transfer this risk to InfraCO. Develop detailed cost estimate. Carry out through Esix assessment. Endows the continuation in content and design meanus. A Emphasis Incidence Continuative races and Lorder allowance Three servers in Bird. Review the used for a detailed report on contrivation matters. Indicate are	0.2 0.5	Active Active	Dec-04 Dec-04 Dec-05	0.76 0.70 0.66			

Part	oscription of Risk	Timing	Project	Complexity of Contract	Poor Contractor Capabilities	Dispute & Claims Occurred Information Management	Other Procurement Areas Design Complexity	Degree of innovation Environmental Impact	Other Project Specific Areas Inadequacy of the Bosiness Cave	Large Number of Stakeholders Funding Availability	Project Management 1 cans Poor Project Intelligence Other Client Specific Areas	Public Relations Site Characteristics	Other Environmental Areas	Economic	Legislation & Regulation Technology Other External Influences	CAPEX	Revenue	Oradity Functionality	Approvability Likelihood Las 5	Impact No Mingation 1 to 5 Significance 1 to 25	Likelihood 1 to S	Vith Mitgation 1 to 5 Ngalifeance	S Les	d Responsibility for Mitigation	Secondary Support for Mitigation	Minigation Strategy	Mitigation Factor	Status	Date to be actioned by	Current Likelihood- Probability	Minimum Ride Cost (GR)	Most Likely Risk Cow (D.)	Maximum Risk Cort (Et.)
Manufacture for the control of the c	reverse		142070000	П								0							4	5 20	3	5 15	1			cines and develop PR strategy in conjunction with TAs. Include Operator in development of		11.0100000	F. 1200 DOM:	100000			
	rovide adequate design (intermediate/detailed) for train and other	Flancing	120 130 2					0								0	0 0	0	0 7			2 8		ter (SCALI)		десного мога адте венда оојестот вка ичто са окцар година. Естории собиштена се поэкца (изак догов), вко веченој, адесојавке поэк језива у Undersike entativity tests. Sesk Operator чеги:	0.0	Active	Dec-05	0.68			
	ELTA) model identifies factors that are adverse to case and for which	Plenng	line 1 & 2					0								0	0 0	0	0 4	5 20	-3	-5 15	5	te (MAD)		Discours about with stakeholders and Scotlish Executive, WebTAG, etc. Undertake sensitivity tests that exclude LUTI model	0.6	Active	Dec-05	0.68			
	oet-fall in funding	Planning	100		ļ į				0							0 0	0	0	0 4	5 20	3	5 15	3	20,000,000		development. Examine potential phasing in post-Congestion Charging. Review options for I	S - COI -	A.Wores	25000	0.000			
										0						. 55	1000		0 4	5 20	-3	5 15	5	- 22		to delivery programme. Report any additional costs to 2004 Plan and Capex estimates that ar	477						
Part	NAME OF THE OWNER OWNER OF THE OWNER OWNE	Potvers	100000000000000000000000000000000000000		Ш	$\perp \perp \perp$		Ш					1	0	\perp	20 34	133		0 4	5 20	3	3 15	5			case. Monitor objectors comments to ensure he credibility not damaged. Increase engagement							
Manuschi Ministeria Mi		Planng	line 1 & 2				0									0	0	0 0	4	5 20	3	5 15	3	tie (PRO)	TET		0.1	Active	Dec-06	0.78	1		
Part		Phones	Late 1 & 2	H	т	+			0							0	0	0	3	4 20	3	5 15	5	te (PRO)	TET		0.1	Active	Dec-05	0.96			
Section of the control of the contro	the approval process changes from HMRI to a 'Competent Person' en there could be a need to procure this person which will incur		Line 1 & 2				- 63					•		Ħ		0	0		0 4	5 20	3	5 15	5	te (PRO)		Hold discussions with HMRI and potential programme for changes in industry approach. Review implications of Competent Person to procurement programme	0.1	Active	Jus-05	0.78			
Seminary Control of the property of the proper	when revising and developing the procurement strategy changes are emified then this could cause increased cost and delays	Procurement	Int 1 & 2	0	Ħ		-5		+					+		0	0		34	5 20	3	5 15	5	tic (PRO)	DLA		0.6	Active	May-05	0.68			
See 1. 1	n objection in detail is successful resulting in cost increases to the	Application for	Line 1 & 2			1				0					++	0 0	0	0 0	0 3	4 20	- 3	4 12	2	tie (PMs)	MM & FM	Establish proactive approach to kieson with stakeholders. Form Community Liation Groups for resistive are at e.g. Leith Walk and Roseburn. Maintain an	0.4	Active	Dec-05	0.84			
Part	theme elay to scheme due to objection of a frontager either pre or post	Powers Application for	Line 1 & 2		11	+++		+++	+	0			++	++	++		4.8	VEC (810)	0 3	4 20	3	4 12	2	ne (PMs)	MM & FM	Maintain dialogue with frontagers during design development and objection period. Create forum to channel inputs to Project firough groups such as small	0.5	Active	Dec-05	0.80			
Part		Powers	line 1 & 2		11	+ + +			0	22			11		++	0 0	(30)		5	4 20	3	4 12	2	tie (PRO)	TET	Access the power demand through modelling of the Network Establish profiles and capacity of proposed system and wider power network capacity. Review th	е 07	Active	Aug-04	0.72	1		
Part		Planner	1me 1 & 2								0					0	0	0	0 3	4 20	3	4 12	2	be (PRO)		Define the delivery organogram to manage interfaces. Define roles and responsibilities to include interface management. Convene working group to manage	0.5	Active	7ul-04	0,80			
Column C	cketing then the integration plans will be compromised	Flaming	Lne 1 & 2						0								0	0	3	4 20	-3	4 12	2	te (PRO)	TET	Confirm approach to through taketing and implication to integration plans. Convene thadow and formal TEL Board. Review scenarios of apportionment of	0.1	Active	Dec-05	0.96			
The content of the		Construction	Line 2	21								0				0			4	5 20	2	5 10	0	be (PRO)	be (CM)	Undertake desk study. Undertake ground investigation. Identify periorpal areas of concern. Confirm the cost allowance and contingency for ground conditions. Include Novance and Collateral Warsanty in SI contractor agreement. Advise confingencies to	9.7	Active	Dec-05	F950	15		
Methodological policy of the p				Ш								0				0			3	5 20	2	5 10	0.		1000	Undertake derik study. Undertake perimanany ground investigations along route and depot site. Identify principal areas of concern. Confirm the cost allowance and contingency for ground conditions. Include Novation and Collateral Warrarty in SI contrac.		700					
Part		Planning										(k i				0	0	0 4	5 20	2	5 10	0		DLA	forward. Maintain record of process undertaken. Review the scope for improved integration wit	0.7						
The control of the co		Procurement	Line 1 & 2												0		0		4	5 20	2	5 10	9	te (PRO)			1	Closed	Dec-04	0.40			
Anthony of the content of the cont		Procument	Line 1 & 2	Ħ	Ħ							3 - I		11	0		0		4	5 20	2	5 10	0	tie (P2(O))		Demonstrate commitment to finding that is present from the SE. Ensure haveledge of PUX, and leaves from other UK schemes is transferred to the team. Consider a workshop or Market Awareness Day with potential infrastructure and equipment suppliers.	1	Closed	Dec-04	0.40			
Memory Me		Procurement	Lee 1 & 2		Ħ		0		\top					77	11		0		0 4	5 20	2	5 10	0	te (PRO)			0.2	Active	Oct-04	0.72			
Mary	fraCo-IntegCo et al	Application for	Line 2	++	++				+		-		++						0 4	5 20	2	5 10	0	he (PRO)	TET		0.1	Active	Der-05	0.76	-		
Sequence Note to company 16 May 16 May 17 May 18 Ma	clay and cost over-runs he transway is insufficiently segregated from bus traffic and/or has sufficiently attractive journey times so that new operators are	Potvers			+++	-			0			÷ -	1 1	+	++	0	🕾	0	4	5 20	2	5 10	0			support proximity of train to Airport from elsewhere in Europe. Seek advice from Operator.							
State content personal perso			Lane 1 & 2			+++	-		0		++		++	+++	++	0	0		0 4	5 20	2	5 10	0	te (OME)	-	Identify somes that could trigger Committee suspension. Maintain dialogue with Committee Clerks and PSU. Discuss any planned changed of personnel eg	0.3	Active	Dec-05	0.68	-	-	
Part	the network service pattern is not developed then there will be delays progress in the business case and some key design areas		Line 1 & 2	Ħ					Ħ	-						0 0	0 0	0	0 4	5 20	2	5 10	0	TEI	te (FRO)	Develop the project programme for developing the Network Service plan. Achieve Board sign-up to the programme and TEL support to meeting key milestones	6.1	Active	Dec-05	0.76			
International programme (as a programme) International programme		Placening	line 1 & 2	+	+	+ + +	+		+		++-			+++	++		0	0	0 4	5 20	2	5 10	0	TET	Se (PRO)		02	Active	Dec-05	0.72	-	-	
The product of the control of the	attern then the programme may be compromised		142576045				0							++	++	0 0			4	5 20	2	5 10	0	be (PRO)		have been given appropriate delegated authority. Confirm deliverbales and form of reports for this	25002	Active	1.50000	010.00			
The first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of the first angle part of 1921 According reports and part of 1921 Accor	evelopment constraints due to the route parsing through areas rotected by planning designations: Green Belt, Conservation Areas,	Flaming	Lne 1 & 2					0								7.00	- 1		- 5	4 20	2	4 8	8.	te (PAE)			8.0 bd	Active	Dec-04	0.52			
Section Processing Proces		Plannin	Inc 2		-	+++					++-		+	++					0 5	4 20	2	4 2		No (PMe)	FM	Tradertile secondarie smithoty scalare (), i conder the range of family that are feasible for the EAPL where Martin, Aslaure with secondarie team members.	0.5	Action	Feb.05	0.70			
See adjusted to the control of the c		it insure	the State of the S																	1720 0000		933		5 4.50	48		5	30000	5.0000	203			
Prince Land 2 Prince Land 2 Prince Land 2 Prince Land 2 L	the assumptions about tram fares being 33% above but fares it appropriate then there is a need to re-design with partry	Paring	Line 2						0								0		0 3	4 20	2	4 8				Rodertake appropriate sensitivity analyses to consider the range of likely fairs including those of but compitation. Chains early information on TET thinking on fairs and report impacts to project. Assess implications on business case with regard to vehi	0.3	Active	Aug-05	0.82			
The process of the	onoderation	Potvers													0		2		0 4	5 20	-1	5 5			100	Committee/Private Bills Unit on procedure for Preliminary and Consideration Stages. Establish criteri							
Private in the private of the private in the privat		Plazing	Inn 2						0							0	0	0	4	5 20	্ৰ	5 5		be (PMs)	FM	Avoid compromise on layout due to potential impact on run-ture. Examine closely with TET to confirm the business case implications to support current layout	0.3	Active	Aug-05	0.62			
The property of the property o		Application for	Late 1 & 2			+++	+		+				++		0		0		0 4	4 16	3	4 12	2	tie (OME)	te (PAE)	Establish short-list of Advocates including those acting on previous CEC proposals. Establish availability. Review benefit of consistent advocate for ITI projects	0.8	Active	May-05	0.64	-		
The presentation of distributions of dis			Line 1 8:2															0	0 4	4 16	- 3	4 12	2	te (MAD)			0.7	Active	Jus-05	0.66			
The process of the contract of		12.7.554	Ine 1 & 2												0		0		4	4 16	3	4 12	2	tie (PR)	tie (PRO)	Maintain on up-to-date knowledge of market. Undertake soft market tening in conjunction with MSPs, DrT and SE. Do not attempt to transfer mice where	0.95	Closed	Apr-04	0.61			
project fewel labors 25 and to demail Basering. See and Second (SSS) necessates and Services and Second (SSS) necessates and Second (SSS) nece	ocurement	Anthonio	Time 1 do 1		\Box		_		\perp								0.40		0 3	4 16	,	4	2	64 (DD)	to (CEOVA)	The standard of the standard o	0.7	Septemb	74.04	0.66			
voice with consequence can observe contract over contract and private transmit and private marked from the future of the contract of the contr		Powers	-						+						++				3	4 16	3	4 19	2	4,100,000,00	m (onvious)	project level. Invite SE staff to attend Board Meetings. Meet MSPs and Councilors affected b		1,000	32000	220			
Active: June 1982 June 1982		- vulnescools	Left 1									0				0	0	0	, ,	10	,	12		paps		vergel structures. Recommend capital cost allowances and confingencies. Inform the finance		Audite	2/00-04				
an optimization custome analysis affects are continuous with CEC to		Construction	Inte 1 & 2									0				0 0			4	4 16	3	4 12	2	1720.5	be (CM)	Review the need for detailed delapolation surveys - Undertake adequate design consideration for input uto the lifesco-	0	Active	Dec-04				
the target and story of steppared modeling of steppared modeling of proposed developments. Hereing and story of steppared modeling of proposed developments. The modeling of steppared modeling of proposed developments. The modeling of steppared modeling of steppare	n optimistic runtime analysis feeds into the business care resulting in venue impacts e.g. the expected priority levels at highway junctions	Operation	Line 2						0							0	0		0 4	4 16	3	4 12	2	Se (PRO)	te (MAD)		0.8	Active	Aug-05	0,64			
Interface, Central Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Tradit: Managements. Control of Endought Impact of that to be availabled in the organization of the proposals (CS). The Management at Haymankers is poorly developed them the service Discount at Haymankers is poorly develo	et activered. enths and scope of integrated modelling of proposed developments ithin city is coundered to be madequate. (George Street car park, this Realm, Waverley Station, Haymarket, Public utilities, Congestion.	Flaming	Line 1 & 2				0									0	0 0	0	0 4	4 16	-3	4 12	2	be (MAD)		Identify issues with relevant stakeholders (CBC, ine, etc.) to facilitate understanding of interactions. Establish Steering Group. Agree schemes that will be taken in	10 0.9	Active	Jun-05	0.62			
the model runs used in the assertances of the proposals (CS). The Algorithms at Haymanket is poorly developed then the service Planning Group that have been set up to bring about interchange development. On A 4 16 3 4 12 be (FRO) TEX Constitute to Haymanket development glass through working groups that have been set up to bring about interchange development. On Active Dec-05 0.78	narging, Central Edinburgh Traffic Management. Interding results as model upgradenting-dates are not included within	Planning	Line 1 & 2	H	+			0	+					+	++	0	0 0		0 4	4 16	3	4 12	2	te (MAD)			0.8	Active	Jun-05	0,64			
	e model runs used in the assessment of the proposals (C5)							9								(%)	300									modeling to provide a high level management tool.							
		Flaming	Line 1 & 2				0									0 0	0	0	38	4 16	3.	4 12	2	te (PRO)	TEI	Contribute to Hagmarket development plans through working groups that have been set up to being about interchange development.	0.1	Active	Dec-05	0.78			

Description of Risk	Timing	Proje	Complexity of Contract	Late Contractor Inv. Design Poor Contractor Capabilities	Government Guidelines Dispute & Claims Occurred	Information Management Other Procurement Areas	Design Cemplestiy Degree of innovation Environmental Impact	Other Project Specific Areas Inadequacy of the Bosiness Case	Large Number of Stakeholders Funding Availability Preject Management Team	Poor Project Intelligence Other Client Specific Areas Public Relations	Site Characteristics Permits, Cancents & Approvals Other Environmental Areac	Political Reonante	Legislation & Regulation Technology Other External Influences	CAPEX OPEX	Programme Quality Functionality	Approvability	Lto 5 Impact No Midgaton 1 to 5 Significance	1 to 25 L'Redit ood 1 to 5	Japact With Milgation 1 to 5 Ngalicance 1 to 25	Lead Responsibility for Mixigation	Secondary Support for Minigation	Minigation Strategy	Mitigation Factor	Status	Date to be actioned by	Current Likelihood - Probability	Minimum Rick; Cost (OO)	Most Likely Risk Cost (Gt.)	Maximum Risk Cost (Ek)
Line 2 -Number of design sterations	Placen	Line					0								0	0 4	4 16	2	4 8	FM		Hold regular meetings to confirm design progress. Agree number of design herations and associated programme. Define design 'passis' and 'frenze' stages. Record areas of changes to molify objections. Recommend float and cost allowances to deal with de-	0.9	Closed	Oct-03	0.44			\neg
Insufficient interest from potential bidders resulting in procurement delays and cost over-run to InfraCo	Procurem	nt line 13	-2							0				0	0	4	4 16	2	4 8	te (CFM)	th (PRO)	Retoew training of market sounding with potential bedders to confirm interest in the scheme. Hold discussous with RES following their role with Docklands project. Curry out FIN Market sounding to obtain feedback on DPOF and InfraCo procurement strategie.	0.6	Active	7ul-05	0.56			
DPOFA Procurement delayed due to mappropriate approach to process adopted by bidders	CARP Procurem	nt line 12	2			0									0	.4	4 16	2	4 8	DLA		Obtain communent of bidders to the process. Present vales of engagement to bidders prior to commencement of CARP. Monitor CARP programme to ensure correct progress.	10	Closed	Mar-04	9.40			
Escalation in insurance premiums well above anticipated rates res in cost over-runs.								0						0		14	4 16	2	4 8	tst (2D)		Establish potential scope of instruble stems. Confirm scope of TESCEC unwances and through best value study confirm the scope of Project unwances. Establish requirements for insurance advisor. Establish current scope and financial allowance for i	0.3	Active	Oct-04	0.68			
DPOFA Procurement delayed due to Council new on acceptable commercial or financial negotiations at variance to tie	Procum	ot line 1.	2										0		0	0 4	4 16	2	4 8	tie (PRO)		Obtain their delegated authority from the Council. Establish limits of authority with the Council. Establish key financial and commercial requirements and simil from the Council. Develop sign-off procedure with the Council to ensure turn-a-round of appr		Closed	Apr-04	0.40	i = 1		
MVA Model does not produce credible results (C1)	Farms	Line 1	2					0						•	0 0	4	4 16	2	4 8	te (MAD)		Closely monder and assess MVA model output. Beniew quality of model, signats and outputs. Take stand back from model to confirm no intuitive errors. Maintain close hairon between modelling teams. Develop the revenue setting team within DPOFA as indep	0.7	Active	Jun-05	0.52			
Delays to procurement of proposed additional detailed site invest works (ground, archaeological, NB, Asset)	gation Procurent	nt Line 1 a	2.			0	+						+	0	0	0 4	4 16	.2	4 8	Se (FRO)	MM& FM	Develop and agree beind and budget for works. Develop programme indicating timing of soventigatory works – identify the latest dates to allow feed within detailed design. Seek verification of programme estimates through experienced contractors. Remove one	d 0.1	Active	Oct-04	0.76			
Developments take place that result in modification to traffic flow leading to delays at road junctions to trains	Planning	Line 1 a	2				\top						0	0 0 0	0 0	4	4 16	2	4 8	te (PAE)		Monitor developments taking place to ensure that due consideration takes place to tram. Ensure traffic modelling is adequate. Ensure planners require modelling submitteness to developments taking place to ensure that due consideration takes place to tram. Ensure traffic modelling is adequate. Ensure planners require modelling submitteness by developers and that there models are validated.	0.1	Active	Dec-05	0.76			
If the stop location at the Airport is poorly relected then there cor reduction in patronage	ld be Planning	Line						0						0 6	0	4	4 16	2	4 8	tie (PMs)	FM	Examine the App location options within limits of deviation. Discuss with BAA and EARL project teams to ensure delivery of an optimal solution. Ensure detailed design glows for TET interface to maximize pair-onage. Assets alignment to BAA that does n	d 0.5	Active	Aug-05	0.60			
If the SE funding is delayed then the programme will be eroded as project will suffer credibility usues	ed Planning	Line 1 d	12						0						0	0 4	4 16	2	4 8	te (FD)	tie (CFM)	Discuss requirements with SE and agree format, content, scope and deliverables including financial cases, outline business cases and full business cases, and annual business plans. Secure funding in place for procurement and project contract perparation p.	0.4	Active	May-05	0.64			
If there is a safety or technical Change of Law then compliance w require investment	d Procurego												0	0	0	0 4	4 16	.2	4 8	DLA		Contracts to provide for clear division on sharing of risk.	0.5	Active	Dec-09	0.60			
If our key objective with regard to revenue generation of tram on train plus bus is not defined then there will be confacts resulting in	y or Planning delays	Line 1 a	1.2					0							0 0	4	4 16	1	18. 8	tie (PRO)	TET	Review options and highlight impacts to bus and train revenues based on scenario review. Discuss approach to confirming key objectives with TEL and ensure Board decision is that on primary objective. Ensure objectives are accepted by bus and train operat.	0.3	Active	Aug-05	0.62			
If segragation between Haymarket and Leith is not achieved then	there Planning	Line	E)	-	+++	++	+	0	+	++	++	+	+++	0 0 0	0	- 4	4 16	1	4 4	tie (PRO)	TET	Seek confirmation od decision to segregate this area. Inform decision makers as to influence on business case if correct decision is not made.	.01	Active	Aug-05	0,74	$\overline{}$	-	
will be reliability constraints If the referendum in February 2005 fails then there will be a reduc	tion in Planning	Line	8			++	+++		$\pm\pm\pm$	++		0	+++	1000 1000 10	0	3	5 15	3	5 15	tie (PRO)		Monitor outcome of report to Referendum result.	0.1	Active	Fe6-05	0.60	$\overline{}$	-	
protential network expansion plans The inclusion of ECCS will impact the project	Planning	Lane 1	12										0	0 0 0	0 0	0 5	3 15	1	3 3	be (PRO)		Beniew the potential influence of the Congenius Charging system. Provide paper to CBC outlining the influence on the otherm and way forward. Prepare for implementations and inclusion. Apprains the influence on particular	1	Closed	Jun-05	0.20		-	
The inclusion of CPZ will impact the project	Pisson	Line 14	2										0	0 0 0	0 0	0 3	3 15	4	3 12	1000		importantiation too inclusion. Appears for materies on particip promotes. Commented the potential influence of the Controlled Parking Zone scheme. Provide paper to CEC continue the influence on the scheme and way focusard. Prepare for implementation and inclusion. Appears the influence on particip provides provides. Obtain CEC continue.	or 0.1	Active	Jun-04	0.98			
Line 1 -SE has objections to STAG II resulting in programme del	ays Planning	Line	15								0				0	0 3	5 15	2	5 10	1004		Develop programme for STAG 2 appeared, submission and SE review stages. Hold on-going meetings with SE on progress of appeared and agree their review period. Submit early deaths to SE. Prepare presentation to SE on the appeared methodology adopted an	10	Closed	Oct-03	0.40			
Line 2 -SE has objections to STAG II resulting in programme del	ays Platring	Line									0				0	0 3	5 15	2	5 10	FM		Develop programme for STAG 2 appearsal, submission and SE review stages. Hold on-going meetings with SE on progress of appearsal and agree their review period. Submit early death to SE. Perpare presentation to SE on the appearsal methodology adopted an	1	Closed	Oct-03	0.40			
Environmental outputs are late	Planning	Line 1	12								0				0	0 3	5 15	2	5 10	MM & FM	tie (PMs)	Define the schedule of environmental outputs for the project. Develop a programme for development of these Reports. Hold on-going team meetings to confirm progress. Revorw consistency of approaches between Line 1 and Line 2. Submit early deaft reports.	E E	Closed	Oct-03	0.40		1	
Delay in the deliverability of property and commercial income req is operational income r.g. North of the City									0						0	0 3	3 15	2	5 10	tie (FD)	22 10	Renew the sensitivity of the Financial Model to options for timing of property/commercial benefits on financial projections and principally farebox revenue. Develop a product approach to the timing of funding. Undertake full approximent of the planned d.	0.3	Active	May-05	0.54			
ack of commitment from key stakeholders to promote the scher									0						0	0 3	5 15	2	5 10	tie (PR)		Develop a communication and consultation report on the process undertaken in particular with reference to key stakeholders. Obtain letters of support from key stakeholders including MPs, CEC, etc. Develop a PR strategy with the key stakeholders for the		Active	Nov-03	0.44			
ine 1 - Bill preparation late	Application Powers	7.00													0	3	5 15	2	5 10	BDB	1000	Develop a paper outning the structure of the Bill. Define the responsibilities for drafting of each element of the Bill. Develop a programme for the preparation of the Bill. Provide early and regularly updated drafts of accompanying documents and Bil.		Closed	Nov-03	0.40			
Lane 2 - Bill preparation late	Appäration Potenti	Wat reserv	1000				\perp								0	3	5 15	2	5 10	BDB	- 503	Develop a paper outlining the structure of the Bill. Define the responsibilities for drafting of each element of the Bill. Develop a programme for the preparation of the Bill. Provide early and regularly updated deaths of accompanying documents and Bil.	- E	Closed	Nov-03	0.40	\longrightarrow		
DPOFA Procurement delayed due to challenge by unsuccessful b			-		0		\perp				\perp	-			0	3	35 15	2	5 10	tie (PRO)		Ensure that DPOFA process has been managed and conducted in accordance with the relevant procurement regulations. Produce clear record of decision making. Provide de-briefs to unsuccessful candidates.	1.	Closed	Jul-04	0.40	\rightarrow		
Line 1 - Delays obtaining information/costs of Network Rail amendments to scheme Parliamentary approval not granted - powers to construct & open	Planning ate Application					4	+++	\perp	+++	-		1	0		0 0	3	2 12	2	2 10	te (PRO) te (OME)		Bild constitution meeting with Network Ball to discuss development options. Agree schedule of deliverables to be issued. Develop a programme to indicate the timing of inputs from Network Ball and MM. Obtain robust our estimates from Network Ball eng. Highlight potential legal contrains that many dectate the copie of design Impedication development. Highlight areas where the require to have contingency.	0,2	Active	Dec+04 Sep-05	0.56	\vdash	-	
not conferred or conditional resulting in delay to programme	Powers	70.	***								0				0	0	130		20 17	an (Cital)		Highlight areas of potential weakness in the case for the train. Bettern the concerns laghlighte	989	- Marie	Supras				
DPOFA Procurement delayed due to consequence of termination	Procurem	nt Line 1 a	2		0									0	0	3	5 15	2	5 10	DLA		Ensure that it is possible to engage the 2nd candidate. Allow programme float to mainties impact. Establish key aspects that would tragger belder withdrawal at the start of the process.	1	Closed	Dec-04	0.40			
Legislative delay to Parlamentary Process and Royal Assent	Application Powers	for line 1	2										0		0	0 3	5 15	2	5 10	tie (OME)		Produce a pager to define the process to be adopted including submission/seview programme. Laine regularly with the Private Bills Unit and obtain their comments on process/programme to lightight areas where confingency may be required to allow for hold	0.2	Active	Dec-05	0.56			
Financing strategy cannot dove-tail to proposed procurement stra	tegy Planning	Line 1 d	12					0						0	0	0 3	5 15	2	5 10	te (FD)		Examine the funding options and interrelation of workstreams generated by proposed procurement strategy. Identify contingency arrangements e.g. alternative options for admissificont nation draw-down on fees. Review need to seek up-front mones from the Coun	0.6	Active	May-05	0.48			
If the contractial matrix to support tie's preferred procurement s proves difficult to deliver then delays and addinonal costs could b		nt Line 1 d	0											0	0	3	253 215	2	5 10	DLA	tie (PRO)	DLA now have instructions from tie (as of November 11 2004) to begin development of suite of agreements: Market testing by PΩN planned Q1 05.	0.4	Active	Dec+05	0.52			
incurred Legislative delay to associated traffic orders	Procurem	nt Line 14	2			+	+	+	+++	+			0		0	0 3	3 15	3	3 9	he (TRO)	MM & FM	Identify interdependency of TKOs for Tram, CETM and ITI. Identify orders needed for tram. Identify those Orders to be included within Bills. Identify those th	at 0.5	Active	Aug-04	0.80		-	
Line 2 - Delays obtaining information/costs of Network Rail	Planning	Line :	9			++	+++	+++				++	0		0 0	.5	3 15	3	3 9	tie (PRO)	DLA	can be made under 1984Act during Bill parsage. Develop programme for design development an Hold consultation meetings with Network Rule to discuss development options. Agree subsidied of debrerables to be issued. Develop a programme to indicate	0.1	Active	Dec-04	0.96			
amendments to scheme Abortive work due to changes to model	Planning	Line 14	12				0	\pm	+	+	+	1	1.50	0	0	5	3 15	3	3 9	te (MAD)		the fining of aputs from Network Ead and FM. Commission study to determine cost estimates from Develop work stream to ensure regular maintenance and model updates is undertaken in parallel with train achemic assessment. Identify model magniform strategy	0.9	Active	Jun-05	0.64	-	-	
feeder services are not viable then ther may be a need to prove	le Plannin	Late 1	12						0					0 0	0	0 5	3 15	3	3 9	TET	tie (PRO)	for each project. Undertake companion of model prior to magnition to understand effect of chang. Renew the options for feeder services in conjunction with LB and TEL. Seek clarity on the potential need for subordy and quantify.	0.1	Active	Dec-05	0.96			
octory the external events or incidents impact system construction, ope or maintenance then the InfraCo may seek costs	ration Construct	on Line 14	2						+++		\Box		0	0	0	3	3 15	3	3 9	DLA	tie (PRO)	Logic of contracts to provide for agreed responsibilities under Relief, Compensation and Force Majoure Events	0.2	Active	Dec-09	0.92	-	-	
f the system integrator function requires separate procurement th	en this Procupens	nt Line 1 d	3			-	+	+	+	++-	-	-	+++	0 0	0 0 0	4	3 15		3 9	tie (PRO)	DLA	Market tening proposed to gauge contractor approach. Horation necessary if function is not steed within InfraCo	92	Active	Aug-05	0.92	<u> </u>	_	
ell require planned and instated http of Edinburgh Council decides not to proceed with scheme	Planning	2000	(-1)			-	+	-	\rightarrow	0		-		0 0	0 0 0	0 3	5 15		5 5	te (PD)	13.1.00	Hold regular meetings with CEC to confirm progress, engage CEC Departments and gain support for the otherne. Propose a structured way forward to approach	Dres I	Closed	Oct-03	0.20		\rightarrow	
ubac consultation process is perceived to be flawed by SE	Planning	-		+	+++	-	+++	+	+++	0		+	+++			0 3	5 15		5 5	tie (PR)		other CBC Departments to cover non-transport functions. Review the need for attendance of CBC at Wor. Develop a report on the communication and consultation process. Indicate guidance used e.g. comultation period. Indicate areas where special measures were		Active	Feb-04	0.24	+	-+	
ining of funding does not coincide with Project requirements - le	-	-			1	+	+++		0	- "		+		0	0	3	5 15	1	5 5	tie (CFM)		taken e.g. ce-databutan of leafast. Indicate number of people contacted, public meetings hel. Enumers Case to define clear cash flow and funding njections to meet delivery sequirements including scenarios of latelearly requirements of funding. Regular	0.3	Active	Jul-05	0.48	\vdash	-	
failure to do up-front works and consequential project delay																						merings with Scottlish Executive to explain progress, apprince various timing options and to t		7.20			\longrightarrow		
sufficient finds are available to allow commencement of Operat ofermonal admisory services		0. 1000000							0					0	0	0 3	5 15	1	5 5	te (FD)		Examine 'short' to 'me-dian' term finding requirementable/budget for DPOF. Re-examine scope of services within each advance resist. Review-budget difference with 2004 Business Plan. Seek right-off to budgets and ability to draw-down on great with the Counc.	H 1	Closed	Jun-04	6.20			
perator does not want Agreement re-structured to deliver servi fraCo in addition to tie		uru seesse	-											0	0 0	3	5 15	1	3 5	be (PRO)	=73.00	Hold mind discussions with Operator. Draft proposed amendments and gain Operator comment	9.7	Active	Jun-04	0.32			
ork of detailed designers cannot be assigned to InfraCo	Procurem		1674			-	\perp			-	$\perp \perp$	-	\perp	0	0 0	0 3	35 15		5 5	tie (PRO)		Appoint design consultant on basis of novation to InfraCo. Include appropriate provisions in InfraCo contract. Test market on design risk assumption.	0.5	Active	Dec:04	0.40	\rightarrow		
grounds of Termination are ambiguous then the contract may be workable the other LRT Schemes in the UK follow different procurement		nt Line 14			0	-	+++	\perp	+++	-		1	+++		0	3	2 12		5 5	DLA tie (PRO)		Contracts to contain robust termination provisions entiting compensation at competitive levels considered bankable. Monitor procurement progress for Liverpool, Leedon, Newcastle and Manchetter systems, the continues to demonstrate commercial onne and legal deliverability.	0.2 ty 0.8	Active	Aug-05 Sep-05	0.52	\vdash	-	
outes then the market may price the scheme high due to first of k		HO - HOEAR	***			•								0	0	0 3	1.30		20 8	an (pa(o)	228	возмого русскита ресурсо го даторого, менени, генения воз навления зумешь, не сощимо не сощиства не сощится нас еди-нестания об состеры	1389	- Jacane	Sepress	3.50			
procurement law and regulations at odds with current expectati tent of flexibility for phased construction of network.	ous ou Procurem	nt line 1 a	2										0		0 0	0 3	5 15	1	5 5	tie (PRO)	DLA	Ensure full technical and financial understanding of tie's preferred project delivery in order that legal analysis can be carried out by DLA.	0	Active	Dec-06	0.60			
lanned developments do not take place	Planning	Line 13	2			-	+++	-	0	0		-				- 4	3 12	3	3 9	tie (PAL)	tie (MAD)	Review the extent of planned developments included in the model. Assess ween case of delay in planned developments. Assess sensitivity of revenue to	0.7	Active	Dec-05	0.66	+	-+	
n objection in detail is successful resulting in delays to the schem						++	+++		0			+			0	0 4	3 12	3	3 9	tie (PMr)		aniumphoni. Develop robust assumphoni for patronage, revenue and business case Entablish proactive approach to bascon with stakeholders. Minitan an integrated approach against other schemes. Develop a stakeholder management protocol		Active	Dec-05	0.72	+	-	
ane 2 - Complications with existing structures - additional remed	Powers	-				+	+	+		+	0	+		0	0	3	4 12	2	4 8	he (PRO)	7.5	moloding process to obvaste the risk of objection. Maintain a track of the cost and programme: Prepare structures schedule for the preferred option. Undertake preliminary apprairal. Develop soo-dification proposals: Undertake detailed structural surveys		Active	Dec-05	0.44	+	\rightarrow	
ooks, unforeseen structures ine 2 - Problems in obtaining Letters of No Objection from HM	7.11	74995	-				+	+	+++		0				0	0 3	4 12	2	4 8	tie (PRO)	54,000,000	where necessary. Undertake dispolation naveys. Derive cost allowance for modifications. A. Rold preliminary discussions with IEEE regarding the scheme. Review the extent of forthcoming unendments to IEEE requirements. Define the information.	0.8	Active	Feb-05	0.44	+	-	
spects of the scheme e overspend against budget during planning phase up to submiss	Powers					++	+++	+	0	++-	100	+		0		0 3	4 12	2	4 8	tie (PD)	22 32	requirements for BARI and mering requirement. Identify key stores of concern. Agree a programme for Develop cost opend rummary for the and advisors including projection for programme. Review contingency requirements. Discuss funding commitment with CEC	-	Closed	Dec-03	0.40	+	-	
id to Parkiement altronage of trams are reduced by lack of confidence in security	or Planning					+ +	+++	0	102.5	++-	++	+			0	3	4 12	2	4 8	MM & FM	-	Review quality of system throughout planning to operational stages. Revenue Protection is needed when patronage is high, feelings of security are most needed	-	Closed	Oct-03	0.42	+	+	
quality of system. Susiness plan is delivered late to CEC and consequently SE	Planni		1.2			++	+		+++	0					0	3	4 12	2	4 8	tie (CFM)	tie (PMs)	when patrousge is low. Conductors obviate the need for full-function TVMs (open versus capen to Define the programme for developing the business case including PwC drafting, be approvals, submission to CEC (and review) and submission to SE (and review	-	Active	May-05	0.44	\vdash	\rightarrow	
alure to demonstrate a credible bushram integration resulting in	Pisson	Line 14	2				0	+	+++			1	++			0 3	4 12	2	4 8	tie (PRO)	TET	Review PwC train resource, availability and contingency. Prepare early deaths of individual to Review the potential extent of integration with bus services that are possible. Develop an Integration Strategy Document to define tie policy on integration with	0.6	Active	Deci04	0.48	+	-+	
pprovability delays dwerse public or stakeholder (Political & SE) to revised publish	ed Planning	Line 13	22		+++	1		+	111	+	++	0	+++	0		0 3	4 12	2	4 8	tie (FR)		bours including review of fire structure. Define the review procedure that wil take plus. Develop a proactive communication strategy to ensure statchholders are kept up to speed and publishes his are carefully managed. Ensure all communications define resisting information.	0.5	Active	Dec-04	0.50	+	-+	

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ef Di	Description of Risk	Timing	Project	Complexity of Contract	Poor Contractor Capabilities Government Guidelines	Dispute & Claims Occurred Information Management	Other Procurement Areas	Desgree of innovation Environmental Impact	Other Project Specific Areas	Large Number of Stakeholders Funding Availability	Project Management Team Poor Project Intelligence	Other Cheat Specific Areas Public Relations	Site Characteristics Permin, Cansents & Approvals Other Environmental Areas	Remanie Legislation & Regulation	Other External Influences CAPEX	OPEX Keessus	Programme Quality Venezionales	Approvability	In 5 Impact No Minigation 1 to 5	Significance 1 to 25	Likethood A to S. Impact	With Mitigation 1 to 5 Significance 1 to 25	Lead Responsibility for Minigation	Secondary Support for Minigation	Minigation Strategy	Mitigation Factor	Status	Date to be actioned by	Current Likelihood Probability	Minimum Risk Cost (D) Mont Likely Risk Cost (D)	Maximum Risk Cost (GL)	
	Line 1 - Problems in obtaining Letters of No Objection from HMRI to aspects of the scheme	Application for Powers	Line 1										0				0	0	3 4	12	2	4 8	tie (PRO)	tie (PMs)	Hold prelationary documents with EMRI regarding the others. Betwee the extent of forthcoming assendments to EMRI requirements. Define the information prequirements for EMRI and meeting requirements. Identify key inner of concern. Agree a programme for	0.5	Active	Dec-04	0.50			
1	Scope of environmental impacts not defined	Planing	1 me 1 & 2					0							0			0	3 4	12	2	4 8	MM & FM		Undertake Environmental Assessments of lines. Entablish malgabon measures sequired. Allow confugering for extending environmental measures	0.9	Closed	Mar-04	0.42			
ras	Bill authorisation delayed due to atternative transport mode to train raised as an more credible solution e.g. guided bus DPOFA Procurement delayed due to re-configuration of bidder	Application for Powers	Line 1 & 2		Ш	11						\perp					0	0	3 4	12	2	4 8	be (PRO)	te (PMs)	Review again paper trail on mode selection. Review and confirm that the deliverables have demonstrated the case to jointly trains. Develop robust STAGs, case for schemes, precognitions et al. Consider the view's of the Operator regarding alternative tec		Active	Mar-05	0.44			4
	DPOFA Procurement delayed due to one of the two CARP candidates	Procurement Procurement	line 1 & 2		Н.	-	0				+++	-		1	0		0	0	3 4	12	2	4 2	10 (PRO)		Here-configuration request made, obtain data from hidden to allow evaluation of the re-configured hody against the original criteria to ensure consistency. Understake review as a parallel workstream to minimize programme impacts. Emmer that to generable to re-ministe the 3rd caracteristic CASP process. Allow programme finat to minimize mapact. Establish key aspects that would rigger	1 1	Closed	Mar-04 Mar-04	0.40		_	-
La	dropping out Lack of agreement with the Council to magnitude and funding of	Procurement	1 me 1 de 2							0				++++	0	\square	0		3 4	12	2	4 8	be (PRO)		hidder withdrawal at the start of the process. Engage in discussion with the Council Discuss credible scenarios and triggers for termination and compensation to OpCo and InfraCo. Limit Operator to	0.5	Active	Oct-04	0.50		_	+
Co	compensation in event of termination with regard to OpCo and InfraCo Contracts	A. SOCIONENTE			Ш		Ш				Ш										1000		9,500	4100200	demonstrable costs. Clarify with the Council the sources for funding due costs at each stage of the pr		7.590000	20007	2000			_
	Service integration proposals delayed due to Compethon Law The junction priority levels change to disadvantage the train resulting in	Procutement Operation	Line 1 & 2											0			0		3 4	12	2	4 8	te (PRO)		Centains disligate with OFF where appropriat and discuss raigh of receivance for full transport integration. Enable continuing disligate with OFFIAMAC on ireas of either comprehisor law or deemed integer is sufficient to provide conflict that biddle's service; Carry out an independent review of the assumed junction priceties. Establish CEC openion and Approval in Principal for junction priceties and potential risk are	W/CX	Active	Apr-09 Jun-05	0.46			4
'n	runtimes not achieved and revenue impact increase in safety standards increase costs	Planning	Line 1 & 2		-	++	- 2	0		-						0	0	0	3 4	12	2	4 8	Se (C34)		cary or an antiposition of the core of the	0.6	Active	Dec-05	0.48		_	+
1	Business opposition and objections to scheme resulting in delays to	Planning	Lene 1 & 2		-	++-	+		*		+++	0		+++	9	(8)	0	0	3 4	12	2	4 8	tie (PR)		Keep abrect of ongoing reviews and impact of new government gadance. Safety Appearal regime looks a Demonstrate how the complation with business stakeholders has been carried out within the report. Develop a FR strategy for the future laison with businesses	0.5	Active	Dec-05	0.50			\dashv
	programme Variance of EMC issues arise out of individual train procurement.	Plannig	Line 1 & 2		H	++		0			++				0	0	0 0	0 0	3 4	12	2	4 8	tie (PRO)		including for fitting mechanisms for dealing with classis. Review the impacts as a consequence. Review the need for specialist input. Discuss inview with relate manufacturers and NR. Unline operator's call-off for NR comunities to identify and argue NR.	0.1	Active	Dec-04	0.58			
E	If there is a dispute between tie/InfraCo then the Dupute Resolution procedure will be required to be applied	Procurement	Ine 1 & 2			0									0		0	0	3 4	12	2	4 8	DLA	te (PRO)	requirements price to train procurement. Contracts to bouse market tested and appropriate DR provisions.	0.2	Active	Dec-09	0.56		\vdash	
13. 13.	recensure was no required to be appared. If the Desinger or InfraCo proposes change of key personnel then there could be a loss of knowledge to the project.	Construction	Ine 1 & 2		Ш				0		Ш				0		0		3 4	12	2	4 8	Se (FRO)	DLA	Enter contractual controls are in place to define and control changes of key personal in InfraCo and Designer contracts. DPOFA and related procurement strategy to be comed by the at all levels.	0.5	Active	Dec-09	0.50			_
	Line 1 - Cost and time overruns due to applianced work	Construction	Late 1			-	++					-		+++	0		0	-	4 3	12	2	3 6	5± (C34)		Recommend a minable contingency (both in terms of cost and programme) to allow for unphanted design development. Review if this risk is obvisted through each	aly 0.5	Active	Dec-05	0.60		-	_
Le	Line 2 - Cost and time overruns due to unplanned work	Constructions	Line 2	\vdash	H	++	++		0	2	++	++		+++	0		0	++	4 3	12	2	3 6	tie (CM)		contractor involvenieni. Review methods of reducing risk through on going development of the Co Recommend a mitable contingency (both in terms of cost and programme) to allow for usphaned design development. Review if this tisk is obviated through ear	rly 09	Active	Dec-05	0.44			_
Lo	Line 2 - Reduced revenue through failure of ticket machines /	Operation	Line 2		1	+++	+		0		+++	++			- 2	0	8	0	4 3	12	2	3. 6	tie (PRO)	FM	contractor involvement. Between methods of reducing into through on agoing development of the C facilists a germinan level revenue protection output and distalily increased security team to entablish a low tolerance evasion culture on the system and better VFM than conductors on trans. Assess the remaining of these ends: on the financial model. Asses	0.6	Active	Dec-04	0.56			_
La	conductors to collect, fare evasion Line 1 - Reduced revenue through failure of ticket machines / conductors to collect, fare evasion	Operation	Line 1						0							0		0	4 3	12	2	3 6	be (PRO)	ми	name consuctors on trains. Justies are remaining to there must on me manual mount. Assets Include a premium level reviewe protection squad and minally increased security team to establish a low tolerance evanion culture on the system and better VFM than constructor on trains. Assets the sensitivity of these ricks on the financial model. Ass	0.7	Active	Dec-04	0.52			
	Line 1 - Number of design terations during planning. Bill submission and procurement stages	Flaming	Lee 1					0									0	0	4 3	.12	2	3 6	MM		Hold regular meetings to confirm design progress. Agree number of design parations and associated programme. Define design 'passet' and 'freeze' stages. Record areas of changes to mollify objections. Recommend Boat and cost allowances to deal with de	0.5	Active	Jun-04	0.60			
Ci da	Changes to material costs and supply due to market conditions beyond that of RPI resulting in cost over-tuns.	Construction	Line 1 & 2								0				0				4 3	12	2 1	3 6	be (CFM)		Assert the level of cost confingency to deal with unexplained market variations. Review inflation from construction industry matrices or at RFI plus X94. Obtain cost advice from MM & FM on the scope and likelihood. Undertake cost review throughout procu	0.4	Active	May-05	0.64			
00	Changes in local labour costs market beyond that of RPI resulting in cost over-runs	Construction	line 1 & 2						0						0				4 3	12	2	3. 6	tie (C34)		Assess the level of cost contingency to deal with unexplained local market variations. Obtain cost advise from MM & FM on the scope and identificand. Undertake cost review throughout procurement process. Review how this risk can be transferred to InfraCO.	0.2	Active	Dec-05	0.72			
50	Instruction of the Compensation Code leads to increased compensation due to objectors	Application for Fowers	Lane 1 de 2											0	0		0		3 4	12	2	3 6	MM & FM	MM & FM	Assess the risk of the standard compensation code has been departed from. Consider SY's authority to legislate on this and review the personal persons Acts where this strue has been considered. Lines with acterized parties. Manage the construction pr	0.1	Active	Dec-04 Peb-05	0.58		_	
00	Flooding occurs at specific areas of the lines causing disruption to construction works or operations: Delays in Parlament due to examination of details e.g. environmental	Planning Application for	Line 1 & 2	-	-		\Box		-	-	+++		0		0		0	0	3 4	12	1	4 4	NO.		Emblish design flood extens pened. Emblish areas proce to flooding. Extraw areas subject to bild flooding and global impacts e.g. rise in water levels. Establish manifolds flood (rea or ever) level for design. Emblish CEC requirements for flood. Review the strengts of case for trains and identify areas of weakness that may be questioned at Committee. Meet with SE to demonstrate robust assessments.	0.9	Active	Dec-04	0.48		_	_
sta	statement or patronage and demand modeling undertaken for STAG	Powers								.,			11 11 20		_		Š	ľ						_	undertaken to wahfate the design and establish a credible base case. Demonstrate the significant am-							
	Delays in Parlament due to examination of details e.g. environmental statement or patronage and demand modeling undertaken for STAG	Application for Powers	Line 2				8	0									0	0	3 4	12	[3] [6]	4 4	FM		Erwew the strength of case for transi and identify areas of weakness that may be questioned at Committee. Meet with SE to demonstrate robust assessments undertaken to validate the design and establish a credible base case. Demonstrate the significant am	0.7	Active	May-05	0.32			
str	If the System Integrator Company relates to our perferred procument strategy to not enter in exclusive agreements with individual IntraCo then we may obtain a compromised revice in a restricted market	Procurement	Line 1 & 2				0								0	0	0 0		3 4	.12	3 1 53	4 4	be (PRO)		Test the ability to accept non-eschainty agreements within market. Include as requirement of Contract from outnet in OEEU and beyond	1	Closed	Dec-04	0.20			
m	If third parties decline to enter into suitable agreemental enegotiate on commitments then the InfraCo will require to account for constraints	Programment	line 1 & 2		H	11		1 1			+++		1-1-4		0		0	0	3 4	12	1 0	4 4	te (PMs)	DLA	Unities, NR, RAA and ScotRai to be engaged progressively and HoTs secured at earliest opportunity in order to de-ruk infraco and tism provisements	0.2	Active	Dec-05	0.52			_
II.	If the decision on train procurement method, payment mechanism et al.	Procurement	Lmc 1 & 2		-	-	+	+++	-		0	-		+++	+		0	-	3 4	12	1	4 4	be (PRO)	DLA	Frepare a plus from current strategy that allows the contractula framework (per and post listinCo) to be prepapred, governance structure to be drawn and	0	Active	Aug-05	0.60		_	_
	delays contract preparation Delay in Bill process caused by judicial review or legal challenge or	Procutement	Line 1 & 2		H	0	H	+++		-				+++			0	0	2 5	10	2	5 10	tie (OME)		financing/payment methodology to be scheduled. Commercial, technical and financial analysis required i Liaise with Private Bill Unit on compliance with Art 6 ECHR and process generally. Highlight areas of potential challenge from unsuccessful bidders. Verify	0.5	Active	Dec-05	0.40		-	_
	referral to EU Line 2 - Dengin is unacceptable to the & stakeholders resulting in delay to programme	Planning	Line 2							0							0 0	0	2 5	10		5 5	Se (PRO)	ter (PMs)	compliance with Standa Orden: Keep PSV informed on compliance matters. Commence stay constitution with Keep 1804 informed on compliance matters of the commence of the constitution with Keep standardstern. Bold on companion matter of support for the scheme. Define the process and programme to obtain the approval of the designs. Appoint SDS to take progressive elimination.	9.0	Active	Dec-04	0.24			_
Lie	Line 1 - Commitant's output or methodology impacts adversely on line 2 work	Planney	Line 1					0									0 (2 5	10	3 3	5 5	te (PMs)	MM & FM	Establish internal to weekly interface and integration discussion between Lies 1, 2 and 3 Project Managers. Maintain close hason with line 2 and 3 consultants in discussion reparding interfaces, casacter, conflicts, turn back facilities, city centre i	0.8	Active	Dec-05	0.24			_
Le	Late 2 - Consultant's output or methodology impacts adversely on line 1 work	Flanning	Line 2					0									0 (•	2 5	10	31 8	5 5	te (PMs)	MM & FM	Entabath internal to worldy interface and integration discussion between Line 1, 2 and 3 Project Managers. Maintain close liaison with fine 1 and 3 consultants in discussion regarding interfaces, capacity, conflicts, turn back facilities, city centre i	6.0	Active	Dec-05	0.24			
	line 1 - Design is unacceptable to be & stakeholders resulting in delay o programme	Planing	Line 1							0							0 0	0	2 3	10	3 3	5 5	be (PRO)		Commence early comulation with key stakeholders. Hold on-going meetings with key stakeholders. Obtain letter of support for the scheme. Define the secons and programme to obtain the approval of the designs. Appoint SDS to take progressive eliminatio	0.7	Active	Dec-04	0.26			
-	Force majeure event, as defined in the contract	Construction	Line 1 & 2			0									0		0		2 5	10	31 8	5 5	tic (FRO)		Define the 2009e of force majorare events. Agree degree of risk transfer to InSuCOIOperator.	0.9	Active	Dec-04	0.22			_
Pr to Br	Proposed procurement routes are not acceptable to CEC or SE leading to delay in programme	Procurement	Line 1 & 2		0												0	0	2 5	10	3 8	5 5	ne (PRO)	GT	Hold regular meetings with PUK regarding procurement options and identify preferred procurement route. Hold meetings with SE to explain preferred procurement method. Include STAG nection in business plan to explain options and reasons for referebon of	0.5	Active	7ul-04	0.30			
	Breach of contract by Promoter or Operator/INFRACO Change of political power in Scottish Parliament resulting in delay in	Operation	Line 1 & 2			0										0 0	2.1	-	2 5	10	3 8	5	tie (PRO)	to seponde	Entablish conditions on which breach of Contract will be arroked. Develop warning procedure. Develop payment arrangements to incentivine performance. Entablish response time requirements. Entablish resurd for excellent performance. Develop selection. The Contract of Co	0.5	Active	Dec-04	0.30			
pci	Change of political power in Scottish Parliament resulting in delay in icheme approval Operator falls to deliver minimum service specification	Application for Powers Procurement	Line 1 & 2		0	-					\square	+					0 0 (0	2 5	10	1	5 5	tie (PRO)		Develop quariety update to Councilion, SE, MSP and Mainter on propriet throughout procurement, contraction and operation. Develop a PR strategy for it contraction phase that includes MSP and Council knison. Review the programme impacts of a Bics Bathishis framinum and 'derived specification. Select InfanCo/Operator on basis of quality of proposals. Develop robust output specifications. Measure	0.2 0.5	Active	Dec-05	0.36		-	_
. 19	Inadequacy of powers in Act or Regulations to implement scheme.	Procurement	Line 1 & 2		0			+						0			0 0	0	2 5	10	3 8	5 5	BDB	reassass	instancian maintain non-oriented specialismos, seece times, overperior on basis of quanty of proposation, Levenoy recuir compart specialismos, seecastic representations for the design guide and make collegatory. Another CEC Planears in evaluation of Undertake under with project team of powers in Rill before introduction. Undertake ongoing review of modifications during Parlamentary process.	6.0	Active	Dec-05	0.28		_	_
rei	resulting in scheme delay Council require further work on business case resulting in delay to	Planning	Line 1 & 2			++	++	+	-	0	+	+	+++				0	0	3 3	9	2	3 6	te (CFM)		Hold regular meetings with CEC to explain the content of the Business Case. Agree structure and content of Business case in advance of development (Done).	0.8	Active	May-05	0.44		\vdash	_
Le Le	ocognaeme. 2 – Higher coen for system & depot maintenance	Operation	Line 2						0							0			3 3	9	2	3 6	he (FRO)		Agree insulating models to be considered. Highlight key juves to CSC by formal presentation of Between basis of materianaese costs and assumptions. Africe life-cycle basis for level of maintenance to be carried out. Assert the sensitivity of these tisks on the finencial model. Asserts the potential to brander higher or brander lower risks to lafe.	0.6	Active	Dec-04	0.48			
Le	Line 1 -Technical outputs are late	Planning	Line 1			++	0										0	0	3 3	90	2	3 6	MM		Perelop a schedule of deliverables. Develop programme for delivery of deliverables. Hold regular team meetings to ensure effective planning, programming and resourcing. Manage encryption to performance and ensure contracts require increased resource all	1	Closed	Oct-03	0.40			
L	Line 2 - Technical outputs are late	Planning	Line 2				0										0	0	3 3	9	2	3 6	FM		Develop a schedule of deliverables. Develop programme for deliverables. Hold regular team meetings to ensure effective planning, programming and resourcing. Manage emephons to performance and ensure contracts require increased resource al.		Closed	Oct-83	0.40			
1	Line 2 - Additional costs / delay due to need for alternative site access	Construction	Line 2										0		0		0		3 3	9	2	3 6	te (PAL)	tie (CM)	Confirm Commence (early consultation with land owners affected e.g. Network Rul. Indicate areas where land access may be contentious. Develop alternative access options where necessary. Advise costs and recommended conte		Active	Dec-05	0.48			
	Effect of general or specific legislation changes on the contract	Operation	Line 1 & 2						7					0		0			3 3	9	2	5 6	tie (PRO)	p. 400.00	Make rainable allowance for contingency for cost increase due to legislation change. Develop a change control mechanism in the Contract to deal with those transpection and those non-transpection.	3 (33)	Active	Dec-06	0.50		_	
to	Line 1 - Inadequate allowance for traffic management costs resulting in- cost over-runs during construction and operation. Line 1 - Higher costs for system & depos maintenance.	Construction	Line 1		1	++	-	+	0		\square	+	+++		0				3 3	9	2	3 6	MM he (PRO)	-	Develop robust price allowances within constructions costs and reconnected configurity. Linder with CEC regarding scope and adequacy of cost allowances. Admits on potential to stander that risk to InfraCO. Review the scope of those-stoppers and assess the Better basis of mantenance costs and assumptions. Admits life-cycle basis for level of maintenance to be carried out. Assess the sensitivity of these risks on the	0.3 e 0.8	Active	Aug-04 Dec-05	0.54		_	_
	Bill authorisation delayed due to madequate Environmental Statement	Application for	Line 1 & 2			++	+	0	-		+		+++			0	0	0	3 3	9	2	3 6	tie (PMs)	-	nerview own or minimum cover and monagement, sowice mercycle count of review or manemant, to on current own, extress are recommy or are made to are famined another Assets the posterior to transfer lower are risks to left. Undertake review of individual line submissions and comparison check.	0.6	Active	Jul-04	0.48		_	_
ro	releasted to accompany the Bills Interest rates wary from those assumed in the business case resulting in	Powers Operation	Line 1 & 2		+		+	•	0		H	+			0	0			3 3	9	2	3 6	te (CFM)	50000000	Establish current interest states. Agree range of interest rates to be coundered with PUK and SE. Run semitivity analysis on upside/downside variations. Confin	0.00	Active	May-05	0.52		_	_
Ind	cost over-runs inflation rates vary from those assumed in the business case resulting in	Operation	Line 1 & 2			++		+	0		+	+	+++		100	0		-	3 3	9:	2	3 6	tie (CFM)	30,000,000	potential for transferring this risk to InfraCO. Agree approach with he and CEC Finance. Establish scope of inflation on materials, labour, operating costs, consultancy fees, etc. Confirm current inflation adjustments. Agree range of inflation rates to be	9 (90)	Active	May-05	0.52		_	_
Ta	cost over-runs Fax changes during construction or operation resulting in cost over-runs	Operative	Line 1 & 2		+	++	++	+++	100			++	+	0	- 56	0			3 3	9	2	3 6	tie (CFM)	te (FD)	considered with PUK and SE. Eun sensitivity analysis on upside/downside variations. Establish strategy for tax implications for Project including the views of PUK and SE. Confirm if this rule can be transferred to InfraCO or limited under change.	of 0.4	Active	May-05	0.52	-	_	-

rescription of Risk	Tim		Project	Complexity of Contract Late Contractor Inv. Design	Covernment Guidelines Dispute & Claims Occurred	Information Management Other Procurement Areas	Design Complexity Degree of innevation Environmental Impact	Other Project Specific Areas	Large Number of Stakeholders Funding Availability	Project Management Team Pour Project Intelligence	Other Client Specific Areas Public Relations	Mre Characteristics Permits, Consents & Approvals Other Environmental Areas	Political	Legislation & Regulation Technology	Other External Influences	OPEX	Programme	Function altry	Approvability Likelihood 1 to 5	Impact No Mitigation 1 to 5 Significance	1 to 25	1 to 5 Impact With Mitigation 1 to 5	Significance 1 to 28	Lead Resp	onsibility (itigation	Secondary Support for Mitigation	Miligation Strategy	Mitigation Factor	Status	Date to be actioned by	Current Likelihood- Probability	Minimum Rick Cost (OK)	Most Likely Risk Cost (GA)	Maximum Risk Cort (Ek)
ask of finare fare restrictions or changes to the re- taking trans less attractive - lower fare box rever	bive transport costs Opera	raboti 1	ine 1 & 2					0					3 4-			0			3	3 5	9	2 3	6		se (PRO)	gr	Contractual obligation to ensure robust revenue protection, risk transfer and sensitively analysis. Establis joint revenue streing committee to maintain macemum risk transfer to DFOFA Operator. Establish protocol for faces setting surviving all CEC parts	0.4	Active	Dec-04	0.52			
Costs increases associated with an extended Park	nentary Consultation Applicat	apon for I	ine 1 & 2	+				+			0			+					3	3 5	9	2 3	6		e (OME)		Undertake early negotiation with objectors and regular liaison with Prevate Bills Unit.	0.2	Active	Dec-05	0.56			
authorisation delayed due to influence of prior ermitted development rights	pprovals where no Applicat	ation for I	lane 1 & 2									0					0	П	0 3	3 5	9	1 3	3		tie (PAE)	tie (PMs)	Hold regular meetings between the (PD) and CEC Head of Planning to docurs strategic usions. Continue to work with the Planning Authority in the ongoing development of the Design Manual, including giving consideration to reparating the procurement and tow	0.6	Active	Dec-04	0.36			
the DPOFA and InfraCo Contracts are compro tro-duction of TEL then the Contract may be uns	ized-due to the Procure	rement I	ine 1-8:2	0													0 (0	0 3	3 5	9	1 3	3		DLA	tie (PRO)	Renew and admise on nuplications of TEL governance structure to DPOFA.	0.4	Active	Feb-05	0.44			
ort & delay arising from vandalism. Damage fro	third parties during Constr	roction 1	ine 1 & 2	+		H		0			++		1				0		4	2 8	8	2 2	4	+	tie (PD)	tie (PRO)	Beview the scope of murance provision for the Project. Review potential to transfer these raiks to the private sector in InfraCo. Not believed to be VFM to	0.3	Active	Oct-04	0.68			
onstruction and operation plastes me l -Delay in availability of land to suit layouts a	droutes Constr	ruction	Line 1					0						\Box			0		0 2	4 1	8	3 3	4	1	tie (PAL)	MM	transfer with DPOFA. Develop Limits of Devanton-particitatly access to release. Confirm had referencing, Identify landsproperties affected by development. Confirm if there is a need for advance work on land parkinging. Develop programme for land acquisition. Consider eng.	0.8	Active	Oct-04	0.24			
ine 2 -Delay in availability of land to suit layouts	d routes Constru	roctos:	Line 2	11				0			11					\Box	0		0 2	4 6	8	1 4	4		te (PAL)	FM	Develop Limit of Devasion- particularly access to scheme. Confirm land referencing, lidentify landsproperties affected by development. Confirm if these is a need for advance work on land parkaging. Develop programme for land acquainton. Consider eng.	0.8	Active	Oct-64	0.24			
ress opposition to scheme	Place	nng 1	ine 1 & 2								0						0		0 4	2 1	8	4 1	4		tie (PR)		Develop a PR strategy for the development, construction and operational phases of the scheme that includes management of communications to national and local press. Include Operator's PR Copubitivy in team. Ensure that press coverage is managed effective.	0.6	Active	Dec-05	0.30			
sterest group opposition to scheme e.g. Business elay to programme	ecup resulting in Plans	ning 1	ine 1 & 2								0						0		0 2	4 8	8	1 4	4		tie (PR)		Report the scope of communication/consultation with interest groups to date. Identify the key interest groups to be managed. Develop a consultation strategy for hisson with these groups through planning and construction phases. Deliver balanced but se	0.8	Active	Dec-05	0,24			
draCO fails to deliver minimum specification			ine 1 & 2				0										1 8	0 0	:2	4 3	8	3 (4)			ne (PRO)	tie (PMs)	Establish 'minimum' and 'denred' specification. Select lufraCo on basis of quality of proposals. Develop robust specification. Review specification relative to that for other best of breed' scheme. Guard against quality erosion dating projutations	0	Active	Dec-05	0,40			
C procurement legislation delays or prevents pro			Ine 1 & 2											0			0		0 2	4 6	6	1 4	5		DLA MARCO	6.000	Maintain in up-to-date knowledge of EC procurement legislation. Highlight legal constraint that may dictate the 210 per of design Inpecification development actividing to-catering of OFEC constraints. Highlight areas where the require to develop supportin. Prepare tractures schedule for the preferred option. Undertake preliminary appraisal. Develop modification proposals. Undertake detailed structural surveys	0.6	Active	Dec-05	0.28			
ine 1- Compărations with existing structures - ac ceks, unforessen structures distributal security required on the system.	tional remedial Country Opers		Line 1 line 1 & 2	-	-							0			-		0		3	2 4	6	2 2	1		tie (PRO)	0.000.00	Prepare structures schedule for the preferred opnos. Undertake preliminary appraisal. Develop modification proposals. Undertake detailed structural narveys where necessary. Undertake dilapidation surveys. Derive cost allowance for modifications. A. Confirm the scope of necurity measures allowed for in the costs. Eviness the potential for these to increase during operations within DPGFA. Commit to early	0.7	Active	Dec-05	0.46			
ne 1 - Additional costs / delay due to need for a		1	Line 1	-				0				0			-	0	0		2	3 6	6	1 3	3		tie (PAL)	9303	higher prescence within operations trace and allow extural wastage of staff to lower sumbers. Adm Develop a schedule of land ownership with plans. Confirm Commence 'early' consultation with land owners affected e.g. Network Rail. Indicate areas where	0.8	Active	Oct-04	0.46			
e have insufficient resources to manage project re			line 1 & 2	+	+	-	-	+	+-	0	+			++-	-		0 (0	2	3 (6	1 3	3	+	tie (PD)		land access may be contentions. Develop alternative access options where necessary. Advise costs Review advisor perception of current the resources and obtain their advice on the number of the resources required for the planning, procurement and operational.	1	Closed	Oct-63	0.20	\vdash		
rogress dl authorisation delayed due to resolution of issue	of with roads Applica	ation for 1	ine 1 & 2	++		1	++			1		0		+			0		0 2	3 6	6	1 3	3	+	ne (FRO)	DLA	stages of the Project. Develop a resource weighted Project Programme to identify areas of pea. Develop a consultation strategy with the Roads Authority to be a clear agreement between Infraco and roads authority on long term maintenance responsibility for	0.4	Active	Dec-04	0.32			
stocesy compensation costs to train operating companies	Opera	ration 1	ins 1 & 2	11											0 6				2	3 (6	1 3	3		мм	FM	on-street namenty and related opaqueness. Review the translation into a lagid agreement with D. Commence early and on-going consultation with Network Rail & TOCs. Identify grounds and mechanisms (in law) for claims through business disruption et al. Defen a contingency sum for claims for exclusion within the financial model.	9.2	Active	Dec-04	0.36			
ndustrial action by various unions: causing project	ost and programme Constr	ruction 1	line 1 & 2										0				0		:2	3 6	6	1 3	3		ne (PRO)		Rensew the roops of Force Majoure. Request latinCO/Operator to provide details of industrial relations strategy. Rensew Contractor's submissions to confirm robust. Rensew the potential transfer of this risk to Operator. Engage with Lothan Buses to c	0.5	Active	Dec-05	0.30			
ase for Baird Drive Option is challenged because not available for Russell Road and Baigreen Un-			Line 2					0											0 3	2 6	6	1 1	1		te (PMs)		Discuss progress on this matter with Network Rad	3.	Closed	Aug-04	0.20			
ower supply costs escalate above RPI. Consus		oation I	ine 1 & 2	++	++-	-	-)		++	-	-	++		0	++	+	3	2 (6.	1 2	2	+	te (PRO)	MM & FM	Assess the level of confingency allowed. Review the sensitivity of the Financial Model to areas. Review the risk transfer through DPOFA: generally not good	0.6	Active	. Dec-04	0.36	\vdash	\rightarrow	
ccerds expected consumption allocated against p peoficiation								2								100											VFM within DPOFA. Engage power imply agreement consultant to test market - possibly develop a							
Il authorisation delayed due to insufficient and la capultation carried out e.g. 3rd parties and HMR Il authorisation delayed due to influence of prote	Pote	mers.	ine 1 & 2	11	44	Ш			1		0	44	1	1	Н		0		0 2	2 3	46 6	2 2	4		tie (PMs) tie (PMs)	BDB	Provide clear write-up on extent of communication and consultation undertaken to date. Confirm major statistics to show effort undertaken. Develop register of 3rd parties. Maintain dialogue with HMSL. Procedure early dialogue with major third parties.	0.6	Active	Nov-04 Dec:04	0.40			
is aumorisation getayed due to subsence of proce slidife including birds, otters, bats, badgers that n icence not obtained to allow movement			Me 1 60.2				0								9		0		• •	250 10		3 (3%)			ge (F2GS)		Review areas where additional curveys are required. Apply for Scences in good time. Establish programme for development and requirements for approval.	.02	Acove	Decius	0.20			
estran raises objections to scheme	Plan	ring 1	line 1 & 2									0					0	0	0 2	2 4	4	1 2	2		tie (PR)	tie (CEO/Chair)	Review the comunitation undertaken to date with SESTRAN. Identify the most appropriate level to undertake histon. Establish the scope of bodies to be considered. Obtain letters of purport from all parties. Establish a long term PR Strategy that mela	(0.1	Active	Jul-04	0.38			
d authorisation delayed due to TROs not deliver	Pow	Vers	ine 1 & 2									0					0		0 2	2 4	4	1 2	2		ne (TRO)	MM & FM	TRO working group established and protocol drafted and awating approval. Seek clarification on domine of responsibility in terms of legallenganeering inputs and net CEC requirements. Seek agreement with net CEC at a sense level on the limits of influe	0.2	Active	Dec-04	0.36			
nusually adverse weather conditions which delay enstruction	X-00000 (0.27) T 2554645	SECOND 1	ane 1 & 2	\perp	0						\perp						0		2	2		1 2	2		be (PRO)		Review the potential risk transfer to the Infraco. Review the need for adverse weather insurance. Ensure Infraco takes this risk.	0.4	Active	Dec-05	0.32			
ifferent forms of mass rapid transit evolve throug aprovement resulting in the reduction in scheme h		ration: 4	ine 1 & 2					0								0		0	1	3.	,	1 3	3		ne (PRO)	TEI	Enablish if Benddity can be incorporated in the design to incorporate technological advances. Agree design life of Projects. Enablish triang of refurbishmentalrenewals for major cost elements. Enablish how the InfluCO/Operator can be made to keep	0.3	Active	Dec 04	0.20			
dl authorisation delayed due to lack of clarity on reded for work at Starbank required	competent authority	ation for 1	ine 1 & 2									0		П			0		0 1	3 1	3	1 3	3		BDB		Include provinces in Bill that competent authority = Scottish Parliament or Scottish Musiters	0.9	Active	Dec-03	0,20			
ill authorisation delayed due to no peior approva am infrastructure required.	Pote	rets.	Line 1 & 2									0					0		0 1	35 1	E .	1 15	1.		tie (FD)		Betablish advertising strategy with the Council and supart on enoting agreements	0.5	Active	Dec+05	0.20			
lansing permission is granted for development wi am because of failure to properly apply CEC Su amendments are proposed to the Bill to cover n	guarding policy		Line 1 & 2									0			Ц,	0 0	0	0	0 5	5 2	5	3 5	5		tie (PAE)	200	Operate planning protocol to ensure that decisions cannot be taken without full consideration of needs of trans Develop robust solution to justify amendments unduring impact on STAG, BS, Business Case et al. Renew the need for an additional objection period,	0.3	Active	Dec-06	0.76			
aymarket Yards then there could be delays to the																			١								prelaminary and compleyation stage and impact on Royal Assent. Review the need for additional constitut			X-80-344.				
elay in development of new model for Revenue 210)			line 1 & 2				0									0 0	20,		0 5	4 2	0	3 3	2		e (MAD)		Agree work programme and incorporate within overal project programme. Procure consultants: Agree timestable and budget. Assess quality of bids and incentions consultant to deliver on time.	0.1	Active	Dec+05	0.96			
ppropriate models not available for testing integr ETM, Traffic Regulation Orders, PPP (financing	ed denge with Planz and financial close	rang 1	ine 1 & 2				0										0	0 0	0 5	5 2	5	2 2		- 10	n (MAD)		Agree work programme and incorporate within overall project programme. Procure consultants. Agree insetable and budget. Assess quality of bids and incentione consultants to deliver on time	0.1	Active	Dec-05	0.94			
there are a large miniber of unsuitable Contracts ofential mability to achieve a strong InfraCo list.	s there will be a Procur	rement 1	Une 1 & 2	11		0					11			+			0 (0	3	4: 1	2	1 4	4		ne (PRO)		Ensure market awareness of scheme through PIN. Adopt procurement strategy that will be attractive to market. De-risk the main contract with pre-works and partner sciention for novation of SDS, whicket etc. Attempt to indentake PU diversion in carriage	0.3	Active	Dec-06	0.48			
there is a lack of appropriate InfraCo resources rojects then there will be delays in implementation	tue to other large Procurs	rement I	ine 1 & 2	ē	08			T									0 (0	4	5 2	0	2 5	10		ne (PRO)	tie (CM)	partiest environs to internation to concept with an extension of the exten	0.3	Active	Dec-06	0.68			
pay there are increases in track costs due to shortag	of steel due to Constru	roctos 1	ine 1 & 2	++	++-	-	-	++	++-			++-	-		-				5	4 2	10	3 4	12		te (CM)		Mondos cost of steel in UK to track cost increases. Maintain cost summary of scheme through SDS development. Benchmark costs against other schemes	0.5	Active	Dec-06	0.80		\rightarrow	
obal demand e.g. China then there will be cost in ements				\perp	44				1			44											10		14 (DDC)		deforced 2005 - 2006			Mr. or	L			
there is a short tender list for TSS and SDS ther competition multi-possessions to sites and traffic congestion			ine 1 & 2	+	-	0		1						++	-		0 (0	0 3	4 4	6	3 4	10		tie (PRO)		Ensure market awareness of scheme through FDT. Adopt procureness strategy that will be attractive to market. Develop clear MOI to ensure obligations condenteded. Develop Construction Implementation Strategy to ascess the possession requirements for land. Develop project programme and assess the impact to scheme for	0.8	Active	Mar-05 Dec-06	0.44			
mum possessoris to sites and traine congestion oald be increaers in preliminacies for InfraCo lobal warning results in increased sea levels resi			Line 1	+	-	-		++	-		1	0		-	1	0 0	0		3	4 1	2	1 4	4		tie (PMs)	104	Levelop - Contriction important accounts to access the posterior or querients for aim. Levelop project programme and artest the impact to scients for different for aims of required of contributions. Seek large through the Contributions for the contributions are contributed for the contributions of seek large through CEC. Assert the implications of real level changes and adequacy of real definers through CEC.	0.1	Active	Dec-05	0.56		$\overline{}$	
rrvices at coastal areas during storms if sea defer	es are made-quate															0			100 m	-20 33		5 P. (5)	100			8200		0.50	100000	-25900004SE	37500			
ffectiveness of Ingliston Park and Ride facility co apact of EARL project which may take some or	promised due to Plans I of area set aside	nng	Line 2												0	0 0			2	2	1	1 2	2		tie (PMs)		Develop design layout that allows growth in Ingliston Park & Ride. Hold regular liamon and co-ordination meetings with Line2, EAPL and Ingliston Park & Ride	0.2	Active	Mar-05	0.36			
r parking graciant opposition group mobilised forcing proje forces and projection of the	t to adopt Plaz	ring I	ine 1 & 2	++	++-			++			++	++		++	0 0		0		0 3	3 5	9	1 3	3	+	tie (PMs)		Monitor press and laws with stakeholders to ensure parties are consisted. Create forums for dialogue in order control responses and ensure information is	0.6	Active	Dec-06	0.36			
nforeseen mitigation plans dvanced Utility diversions prove to have been po weks resulting in claim from Infraco for additiona	in way of the tram. Constru	ruction I	ane 1 & 2	11	0			11					Ħ		-		0		3	4 1	2	2 4	8		tie (UM)		conveyed that is accurate. Define scope of works undertaken and to be undertaken in InfraCo pricing to entire clienty of understanding and pricing.	0.3	Active	Dec-06	0.54			
is Operators (eg First) maximise exploitation of		ration 1	ine 1 & 2	++	-		-	-				-		++-	0	0			5	5 2	15	2 4	8		ne (FRO)	TET	Develop integrated plans to assess transition periods and final configuration with all relevant operators.	0.3	Active	Dec-09	0.82			
overconnent and succeed in capturing revenue are agid application of Design Massial argentions into	ned to be Tram's duces delay in Plans		ine 1 & 2	+	-		++	+			+	0		+				0	0 4	5 2	0	3 5	15		tie (PRO)		Hold durvamons with CEC Planning respecting the application of the Design Manual to ensure clarity of obligations on CDS and latinGo. Ensure adequate cost	0.2	Active	Dec-06	0.76			
aring approvals process or intrease in capital s fraco adopts Self Certification as its method of (roction I	ine 1 à 2	-	-	-		-	-			-		-	\Box		1		2	3 /		1 2	2	-	ne (PRO)		allowancies are set and e for overcoming delays or baking in requirements Define QC methodologies to be employed with clear understanding of quality thresholds for product and design. Ensure TSS fulfile obligations to verify	0.1	Active	Dec-06	0.56	\vdash		
strace adopts near Certification as its method of c stulting in poor quality of construction. The documents produced in support of the Parlis			ine 1 & 2		0	0	-	1.				++		+	Η,		0	0	4	3 1	2	2 3	6		he (PRO)	tie (PMc)	Denne (2, methodosogies to see employee with case understanding or quarry measured for product and dength. Zenure 12.5 minu congitations to vernly complained by SDC and influence. Exture adequately resourced the manifest	0.2	Active	May-05	0.72			
we been variously produced for specific purpose e entirely suitable when used by for implementals artes (TSS, SDS and Infraco in particular)	only which may not		PERSONAL																65	(23) (35	3	200 (200)	53			(3.14.1)	Outderlaws a river to the filter of an occupantal product or safe and combine to appropriate constant and common common was resource; and some workstreams. Set baseline for renderers as to what they should consider as there lods for each do	177.77	College College	112000000000000000000000000000000000000	1583			
ensitivity to public opinion during parliamentary o		rement I	ane 1 & 2								0						0		0 4	5 2	10	3 5	15		be (PRO)	tie (PMs)	Emblack timescales for definite 'no-go' areas. For all other areas establish what can be done to positively support both the parlamentary process and inclinated how. Described of the former two assumed, are there are others that can be recommissed?	0.4	Active	Jun-05	0.72			
ay lead to certain intrusive works: being delayed addition to risks 125 and 145, access to land a		rement I	Ine 1-8:2		-			1	1		-	0		-			0 (400		9.10		20 100	100	_	tie (PMs)		implementation. Examples of the former are apparent - are there any others that can be proprieted? T Establish a register of all land and property along the route. Identify properties where access for site investigation is required. Confirm status of access to take and	0.4	Active	Dec-05	0.64			

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Updated By: Mark Bourke, TIE Date: 3 March 2005

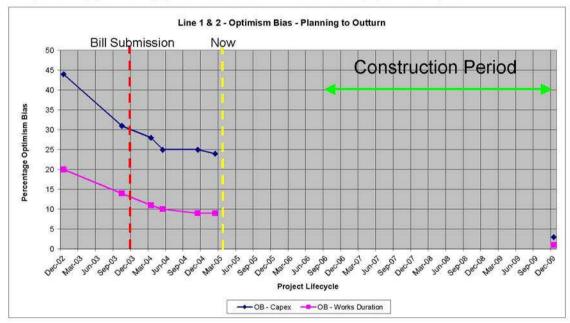
f Description of Risk	Traing	Project	Complexity of Contract Late Contractor Inc. Design	Poor Contractor Capabilities Government Guidelines Dispute & Claims Occurred	Information Management Other Pracurement Areas	Design Complexity Degree of innovation Environment of Impact	Other Project Specific Areas In adequacy of the Bosiness Case Larce Number of Stakeholders	Funding Availability Project Management Team	Poor Project Intelligence Other Client Specific Areas	Public Relations Site Characteristics Pernits, Consents & Approvals	Other Environmental Areas Political	Remanie Legislation & Regulation Technology	Other External Influences CAPEX	OPEX	Programme Quality	Functionality Approvability	Likelihood 1 ta 5 Impact	No Minigation 1 to 5 Significance 1 to 25	Likelikood 1 to S	With Mitigation 1 to 5 Significance 1 to 25	Lead Responsifor Ming	Second Support Mitiga	for Mitigation Strategy	Mitigation Factor	Status	Date to be actioned by		Mainten Risk Cost (IX)	Most Likely Risk Cost (Dk)	Maximum Risk Cart (fk)
2 If prograting detailed design under SDS with eventual accusion to Inflace may assist progress generally but will firm buildability input from the Inflace contrastors. It may also lead to insuest between the Inflace and SDS over the adequacy of the desig.	Procument	line 1 & 2				0							0		0		4	4 16	2	4 8	tie G	RO) I	DLA Consideration of buildholder and adequacy of designs will be obligations placed on the SDS Provider in the SDS Contract. During the procurement of Infraco in the Infraco Contract the Infraco will be asked to comment on price and shimately take resp.	nd 0.1	Active	Dec-06	0.76			
3 If approval authorities for the scheme are not established clearly, the project may be vulnerable to third parties with power over the project	Procuement	Line 1 & 2			1 2 28			Ħ		0					0 0	0	3	3 9	1	3 3	Se (J	RO)	Establish all credible bodies I sufficience that may have utilizates over derings acceptance and industriand timescales and sequence of approval required. Some elements of design may have to completed and fixed prior to novation of SDS to the Infrace? e.g.	0.6	Active	Dec-06	0.36			
If the programme is based on outdated documentation or documentation from incumbent consultants that contains a number of incident assumebous.	Plazong	line 1 & 2						0							0		4	5 20	2	4 8	Sr (X	210	There is the potential that the current bussine is already out of date. Clock the currency and appropriateess of all data sources that provide the current bussine programme. In particular, the current Contraction Strategy Reports are both deaft docum.	0.6	Active	Aug-05	0.56			
5 Failur to address meteorary advanced works not related to Network Bul or validors. If these matters are not addressed by means of advanced contracts, there is a significant rule of mining the opportunity of statring bulk earthmooks in Spring 2006, p.	Procurement	Line 1 & 2	0										0		0		4	5 20	2	5 10	to G	RO) te (UNO For example, the Gogar depot site requires 200,000m ² 3 material emaration and disposal, requires a water main deversion and it also a cultural heritage site requiring archaeological investigation. Other than obvious areas of programme risk, transform th	0.3	Active	Dec-06	0.68			
6 Current risk register cusy be adequate for global consideration of risk, but the project would benefit from breaking implementation risk down into sub-project to tailerstraid the programme and out-risks in tracessing detail for construction purposes action.	Procurement	line 1 & 2						0									4	4 16		4 4	Se G	R(O)	Consider best way of activering better detailed risk ascensment and implement. It is recommended that that is not left to the Infrace to undertaile upon appointment as all already be too late.	ne 0.3	Active	May-05	0.62			
7 If there is no Planning Supervisor appointed under the CDM Engalations for the length of the project then there is a risk of not executing the project in the sport of the negalations or enabling landshore.	Prosutement	Line 1 & 2		-					0		200-21		0		0	===	4	4 16	1	4 4	tie (j	RO)	Potential lie confusion over roles and obligations, particularly with interfaces to regular others where he may or may not be the client. Clarify Planning Supervisor remit (Transprojects only or all the projects?) and appoint at the earliest opportunity	0.5	Active	May-05	0.50			

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Profile of Optimism Bias

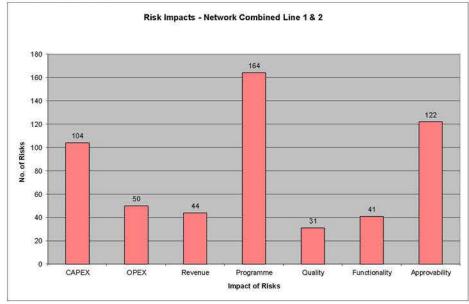
A summary chart of the progress of reducting Optimism Bias is shown below that indicates a measure of progress in risk management.

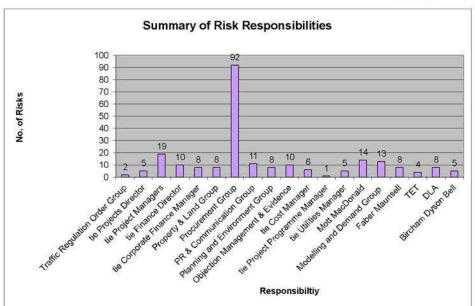


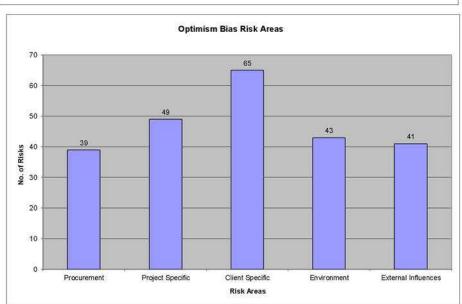
Event	Date	OB - capex	OB - works	
Appointment of Advisors	Dec-02	44	20	Upper Bound Starting Values (HM Treasury)
Calculation of OB for STAG & PFCs	Oct-03	31	14	
OB Refresh	Mar-04	28	11	
OB Refresh	May-04	25	10	
OB Refresh	Nov-04	25	9	
OB Refresh	Feb-05	24	9	
Application for Funds	May-05			
Commencent of Construction	Jul-06			
Completion of Construction	Dec-09	3	1	Minimum Values (HM Treasury)

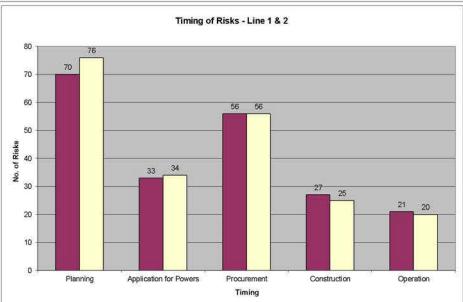


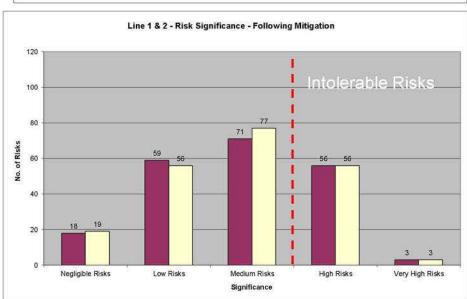
SUMMARY CHARTS

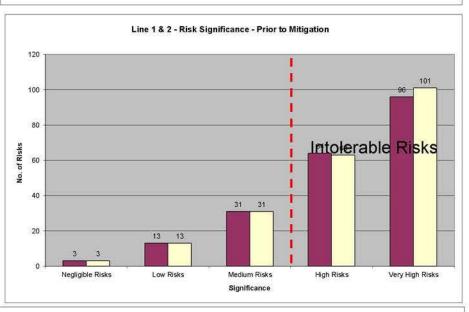


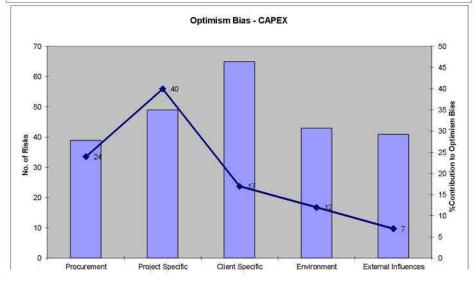


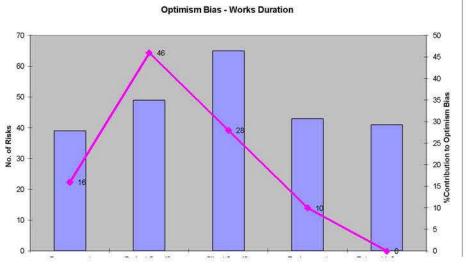














CALCULATION OF OPTIMISM BIAS

Line 1 & 2 STAG and Preliminary Financial Cases: OB Calculation

The Optimism Bias included within the STAGs and Preliminary Financial Cases for both Lines 1 and 2 are noted as follows.

Works Duration 14%	which equates to	5.0 months delay for a	36 month construction period for both Line 1 and 2
CAPEX 31%	which equates to	£ 68.2 million costs for a	£220 million Capital Expenditure (exluding contingecy) for Line 1
CAPEX 31%	which equates to	£ 79.1 million costs for a	£255 million Capital Expenditure (exluding contingecy) for Line 2

It is noted that these estimates were based upon an assessment of the mitigation factors affecting both lines in October 2003 and allows 1% for cost of ongoing mitigation. It is noted that there are very little differences in risks, mitigation factors and timing between Line 1 and 2.

At that time, our overall (all risks) mitigation factor for the scheme was 0.34 (i.e. 34% complete) with a corresponding OB values as follows.

Works Duration 13 % CAPEX 29 %

Adopting the OB Risk Areas, which exclude a number of areas where risk will potentially result in an increase in works duration and capital expenditure, the following calculation is performed.

	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals	Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences
Works Duration			16							46		8		6		14			10							
CAPEX		3			21					22	18	10				7		9	3				7			- 1
Average Mitigation																	,									
			0							0.3		0.4		0.2		0.2			0.3							
Average Mitigation		0			0.9					0	0.3	0.21				0.2		0.2	0.3				0.4			
Modified Mitigation		0	16	0	0	0	0	0	0	32	0	4.8	0	4.8	0	11	0	0	7.5	0	0	0	0	0	0	0
Modified Mitigation	0	3	0	0	2.1	0	0	0	0	22	13	7.9	0	0	0	5.6	0	7.2	2.1	0	0	0	4.6	0	0	0

77 Works Duration 67 CAPEX

The OB can be estimated from the above assessment of mitigations as follows.

Works Duration 15 % CAPEX 30 %

A bottom-up caluciation of OB was undertaken to verify the order of risk assuming all capital risks occur and are reduced by the degree of mitigation of those risks. This used uses the maximum impact equal to upper bound OB values and degree of mitigation for each grade of risk.

This calculation confirmed that for Line 1 of a capital cost of £220m and Line 2 of £255m exicuding contingencies that the Optimism Bias was as follows

Line 1 CAPEX 31 %
Line 2 CAPEX 30 %

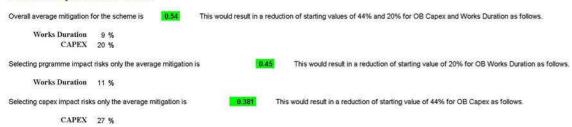


CALCULATION OF OPTIMISM BIAS

March 2004: Optimism Bias Calculation

The calcualtions performed below are illustrative of the range of values that can be anticipated at present (6 months on from our originalc OB Calculation)

Line 1 Optimism Bias



Adopting the Main OB Risk Areas, into which all the risks lie, as a check the following calculation is performed.

	PRO	C.	00 0					PRO	J. SPI	ECIF.		CLI	NT S	PECI	š	0	m 5	ENV	9			EXT	INF	2			=0
	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals	Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences	
Works Duration				16	3				- 1	16				2	8				- 1	0				0			1
CAPEX				2	4					10				1	7				.1	2				7		î	NOT WATER TO
Average Mitigation				0.4	93				6.	395				0.3	86				0	58				0.317			Works Duration
Average Mitigation				0.4	25				0.	335				0.0	77				0.5	75				0.26			CAPEX
Modified Mitigation				8.1	12				27	.83				14.	392				4	2				0			54.5 Works Duration
Modified Mitigation				13	.8				2	6.6		1		10.	591				5	.1				5.18			61.3 CAPEX

The OB can be estimated from the above assessment of mitigations as follows.

Works Duration 11 % CAPEX 27 %

Allowing a 1% increase in Capital Expenditure Optimism Bias for the cost of mitigation then we can conclude that the Optimism Bias has reduced on the project, as follows

Works Duration
CAPEX 28 % which equates to which equates to E 61.5 million costs for a E 220 million Capital Expenditure (exluding contingecy)

It is concluded that the the Optimism Bias has been reduced by It is concluded that the the Optimism Bias has been reduced by E 6.7 million costs since reported in STAG and Preliminary Financial Case

tie Limited Line 1 and 2 Tram Schemes Project Risk Register

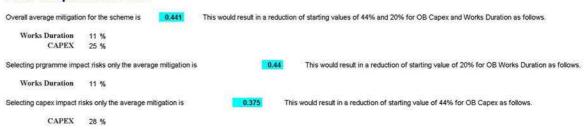


CALCULATION OF OPTIMISM BIAS

March 2004: Optimism Bias Calculation

The calcualtions performed below are illustrative of the range of values that can be anticipated at present (6 months on from our originalc OB Calculation)

Line 2 Optimism Bias



Adopting the Main OB Risk Areas, into which all the risks lie, as a check the following calculation is performed.

	PROC		00			00 02		PROJ.	SPEC	IF.		CLIEN	T SPE	CIF.				ENV.			EXT.	INFL.				= 10
	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences	
Works Duration				16	i.				46	5				28					10				0			
CAPEX				24	ĝ.				40)		2		17	i E		50		12				7			
Average Mitigation				0.49	3				0.39	95				0.48	6				0.56	3			0.4			Works Duration
Average Mitigation				0.42	5				0.33	35				0.40	3				0.48	6			0.26			CAPEX
Modified Mitigation				8.11	2				27.8	83				14.3	92				4.37	55			0			54.704 Works Dura
Modified Mitigation				13.8	3				26.	6				10.1	49		à		6.16	8			5.18	1		61.897 CAPEX

The OB can be estimated from the above assessment of mitigations as follows.

Works Duration 11 % CAPEX 27 %

Allowing a 1% increase in Capital Expenditure Optimism Bias for the cost of mitigation then we can conclude that the Optimism Bias has reduced on the project, as follows

Works Duration
CAPEX
28 % which equates to
CAPEX
28 % which equates to
\$\frac{3.9}{2.0}\$ months delay for a
\$\frac{\xi}{2.0}\$ million costs for a
\$\frac{\xi}{2.0}\$ million Capital Expenditure (exluding contingecy)

It is concluded that the the Optimism Bias has been reduced by It is concluded that the the Optimism Bias has been reduced by

1.1 months since reported in STAG and Preliminary Financial Case
2 7.1 million costs since reported in STAG and Preliminary Financial Case

t i e

CALCULATION OF OPTIMISM BIAS

The following steps have been defined to determine the CAPEX and Works Duration with Optimism Bias affecting the Line 1 & 2 schemes.

It is noted that there is a shared section for Line 1 and 2. The CAPEX/Works Duration for combined section should not double count the shared section if both proceed. As the financial models are being run on each line there is a clear requirement for separate Optimism Bias calculations.

Step 1: Determine CAPEX

MM & FM

The Capital Expenditure of the Project shall be determined by the Technical Advisors for Line 1 and 2.

The CAPEX should exclude any Contingency allowances to prevent any double counting of risk. It is noted that the Optimism Bias compares the costs anticipated at Outline Business Case and actual out-turn costs.

Step 2: Determine Works Duration

MM & FM

The Works Duration refers to the period between Construction Start and Works Completion i.e. the construction period, and shall be advised by the Technical Advisors for Line 1 & 2.

The Works Duration compares the period estimated at Outline Business Case and actual out-turn programme.

Step 3: Identify Project Risks

ALL

The Project Risk Register shall be used to summarise risk exposure on the Project. The Risk Register will receive contributions from all the Project Team including advisors and shall be maintained by tie Risk Manager

Assuming that the risk register represents a complete summary of risk exposure on the Project, we can use the register to calculate Optimism Bias.

The advisors shall be asked to verify that the Risk Register comprehensively summaries all the risks that they are aware of and should be considered by tie.

The risks to be identified by the advisors shall include those created by the assumptions made by the advisors and summarised in the Assumption Register, for the scenario where the assumptions are incorrect.

Step 4: Confirm the CAPEX/Programme Impact

MM & FM

The technical advisors will be asked to confirm the financial/programme impact of each risk, according to the suggested gradings.

The suggested gradings of CAPEX and Programme impacts are included within the Definitions worksheet of this spreadsheet. Risks that have a Major Impact (>£1m and >3 months) shall be estimated by the advisors as £2.5m, £5m, £7.5m, £10m etc or 3months, 4months, 5months, 6 months etc.

Step 5: Determine Risk Mitigation Strategies

ALL

The Project Team including advisors shall determine the potential risk mitigation strategies for each risk.

An initial scope for mitigation of risks has been determined by the advisors and developed further by tie (RM)

Step 6: Determine Cost of Risk Management

ALL

The cost for implementing the risk mitigation strategies shall be determined by the Technical Advisor Team for each risk.

The advisors are requested to highlight any areas of risk mitigation that they believe to be outwith their original remit for consideration by tie (PMs/PD)

The cost for implementing the risk mitigation shall be used to estimate the CAPEX including Optimism Bias

Step 7: Review Implementation of Risk Management

tie (PD/RM)

The decision to implement proposed risk mitigation strategies shall be where the cost of mitigation presents better value for money than accepting risk.

A review of additional costs versus cost of risk shall be undertaken by the tie Projects Director and Risk Manager

Step 8: Allocate Risks to Optimism Bias

tie (RM)

The Project Risk Register shall be reviewed relative to Risk categories.

This will allow review of the identified risks for each of the risk areas identified by Optimism Bias. This shall be carried out by the Risk Manager

Step 9: Review Scope of Risk Register

tie (RM)

The scope of risks identified shall be reviewed to determine if further risks require to be considered.

This review shall be carried out by the Risk Manager relative to published guidance and historic project risk registers. Additional risks shall be subject to the above steps.

Step 10: Assess Project Type

tie (RM)

A review of the 'project type' is required to allocate the scheme to a Project Type and determine starting values for risk.

Following review by Mott MacDonald of the 'project type' it is considered that the Tram Projects are a "Standard civil engineering project".

Step 11: Determine Starting Values

tie (RM)

Table 4 within the guidance reports the following 'indicative' lower and upper bound values for optimism bias levels for 'Standard' civil engineering projects.

Opti	imism E	Bias (6)
Works Du	ration	CAF	EX
Upper Bound	Lower Bound	Upper Bound	Lower Bound
20	1	44	3

Standard Civil Engineering

Table 16 within the guidance recommends that we adopt the upper bound value for optimism bias a 'starting value', and suggests the following distribution of impacts.

13	PRO	c.			u.	44	<i></i>	PRO	J. SF	ECIF		CLIE	NT S	PEC	F.			ENV			_	EXT	INF			
	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals	Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences
Works Duration			16	J. J.	J.J.	Ű I	Ů ľ	Į.		46		8		6		14			10				الرياا			
CAPEX		3	-		21					22	18	10				7		9	3				7			

It is noted that these figures represent percentages of the Upper Bound Optimism Bias figures

Step 12: Determine the Mitigation Factor per Risk

ALL

Determine the Mitigation Factor for each of risks identified in the Risk Register

Mitigation Factor	Description
0.0	Risks are not mitigated
0.0 to 1.0	Partial mitigation of risks
4.0	All sieks are fully mitigated

The Mitigation Factor should be reported for each risk identified by the Persons Responsible for each of the organisations and groups who are responsible for mitigating each risk as 0.0, 0.2, 0.4, 0.6, 0.8 or 1.0. The greater the mitigation factor the le

Step 13: Review of Evidence

tie (RM)

A review of the evidence to justify the advised Mitigation Factor is to be carried out to independently verify proposed reductions.

It is proposed that tie Risk Manager carries out this review with support from the tie Project Managers

Step 14: Determine the Mitigation Factor per Risk Area

tie (RM)

The Mitigation Factor for each area contributing to Optimism Bias shall be determined by the Risk Manager for Works Duration and CAPEX.

This will be calculated as an average value of the individual Mitigation Factors for each Project Risk Area

Step 15: Determine the Optimism Bias

tie (RM)

The above published indicative Upper Bound Figures for %Contribution of Optimism Bias shall be modified by the Mitigation Factor per Risk Area (par example)

PROC. PROJ. SPECIF. CLIENT SPECIF. ENV. EXT. INFL.

	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals	Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences
Works Duration			16						6	46		8		6		14	2		10							
Average Mitigation Factor			0.4							0.4		0.4		0.2		0.6			0.2						,	
Reduction in Optimism Bias			6.4						a.	18		3.2		1.2		8.4			2							

The above mitigation factors and the following calculations are for illustrative purposes only

From the above example, it can be seen that approximately 40% (Sum of the Reduction in optimism bias) has been managed. This leaves approximately 60% of the potential upper bound optimism bias on Works Duration i.e. 12% Optimism Bias to be considered.

If the works duration was 30months, then there is an upper bound Works Duration Optimism Bias of 6 months (20%). The above example illustrates that this would reduce to just over 3.5 months (12%) after implementing risk mitigation strategies to achieve

Step 16: Lower Bound Check

tie (RM)

A check that the CAPEX/Programme impacts have not been reduced below the lower bound values as reported above is to be carried out by the Risk Manager.

Step 17: Final Estimated Optimism Bias with Risk Management

tie (RM)

Combine the cost of risk management and anticipated Optimism Bias on CAPEX.

Step 18: Check CAPEX/Programme Risk Allowance

tie (RM)

A check on the anticipated risk potential from the financial and programme gradings shall be carried out as a check.

Step 19: Decision to Proceed

tie (PD)

A review of the output shall be undertaken by the Projects Director and a decision made whether to proceed or instruct further mitigation.

Step 20: Financial Model

GT

The CAPEX including Optimism Bias and Risk Management shall be considered in the Financial Model.

The application of OB to the Financial Model is to be reviewed relative Scottish Executive guidelines and requirements. GT to develop paper on how the Optimism Paper is to be taken forward. GT to arrange meeting with SE.

CALCULATION OF OPTIMISM BIAS

May 2004: Optimism Bias Calculation

The calcualtions performed below are illustrative of the range of values that can be anticipated at present (8 months on from our original OB Calculation)

Line 1 Optimism Bias

Overall average mitigation for the scheme is 0,5 This would result in a reduction of starting values of 44% and 20% for OB Capex and Works Duration as follows. 0.5 This would result in a reduction of starting value of 20% for OB Works Duration as follows. Selecting programme impact risks only the average mitigation is Works Duration 10 % Selecting capex impact risks only the average mitigation is 0.453 This would result in a reduction of starting value of 44% for OB Capex as follows.

Adopting the Main OB Risk Areas, into which all the risks lie, as a check the following calculation is performed.

	PRO	C.				 100		PROJ.	SPEC	IF.		CLIEN	SPE	CIF.				ENV.				EXT	INFL				_
	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Spedific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Spedific Areas	Public Relations	Site Characteristics	Permits, Consents & Approvals	Other Environmental Areas	Political	Economic	Legislation & Regulation	Technology	Other External Influences	
Works Duration					6		- 1		46	8				28					1	0				0			1
CAPEX					4		1		40	Si .	- 3			17			- 4		- 1	2				7			
Average Mitigation				0.	538				0.44	5				0.56	3				0.	58				0.49			Works Duration
Average Mitigation				0.	47				0.44	2				0.46	9				0	.6				0.29			CAPEX
Modified Mitigation				7.	392				25.5	3				12.2	36				4	.2				0			49 Works Duration
Modified Mitigation				12	.72		73		22.3	2				9.02	7		- 0		4	.8				4.97			54 CAPEX

The OB can be estimated from the above assessment of mitigations as follows.

Works Duration 10 % CAPEX 24 %

Allowing a 1% increase in Capital Expenditure Optimism Bias for the cost of mitigation then we can conclude that the Optimism Bias has reduced on the project, as follows

Works Duration 10 % which equates to 3.6 months delay for a CAPEX 25 % which equates to £ 54.3 million costs for a 3.6 months delay for a 36 month construction period
£ 220 million Capital Expenditure (exluding contingecy)

It is concluded that the the Optimism Bias has been reduced by It is concluded that the the Optimism Bias has been reduced by

CALCULATION OF OPTIMISM BIAS

May 2004: Optimism Bias Calculation

The calcualtions performed below are illustrative of the range of values that can be anticipated at present (8 months on from our original OB Calculation)

Line 2 Optimism Bias

Overall average mitigation for the scheme is 0.52 This would result in a reduction of starting values of 44% and 20% for OB Capex and Works Duration as follows. Works Duration 10 % CAPEX 21 % 0.53 This would result in a reduction of starting value of 20% for OB Works Duration as follows. Selecting prgramme impact risks only the average mitigation is Works Duration 9 % Selecting capex impact risks only the average mitigation is 0.46 This would result in a reduction of starting value of 44% for OB Capex as follows.

Adopting the Main OB Risk Areas, into which all the risks lie, as a check the following calculation is performed.

3	PROC	3.						PROJ.	SPECI	F.		CLIEN	T SPE	CIF.			C 2	ENV.				EXT. IN	IFL.				_
	Complexity of Contract	Late Contractor Inv. Design	Poor Contractor Capabilities	Government Guidelines	Dispute & Claims Occurred	Information Management	Other Procurement Areas	Design Complexity	Degree of innovation	Environmental Impact	Other Project Specific Areas	Inadequacy of the Business Case	Large Number of Stakeholders	Funding Availability	Project Management Team	Poor Project Intelligence	Other Client Specific Areas	Public Relations	Site Characteristics	ts, Consents	Other Environmental Areas	Political	Fconomic	Legislation & Regulation	Technology	Other External Influences	
Works Duration				16		-			46	is a				28					10)				0			
CAPEX				24					40	Ù				17					12	2	- 4			7			
Average Mitigation				0.50	8				0.46	5				0.58	3		- 2		0.5	73				0.493	2		Works Duration
Average Mitigation				0.4	7				0.44	6				0.50	14				0.55	57	T			0.29			CAPEX
Modified Mitigation				7.39	2				24.6	1				11.6	76				4.2	7				0			47.948 Works Duration
Modified Mitigation				12.7	2				22.1	6				8.43	2				5.3	16				4.97			53.598 CAPEX

The OB can be estimated from the above assessment of mitigations as follows.

Works Duration 10 % CAPEX 24 %

Allowing a 1% increase in Capital Expenditure Optimism Bias for the cost of mitigation then we can conclude that the Optimism Bias has reduced on the project, as follows

36 month construction period £ 255 million Capital Expenditure (exluding contingecy) Works Duration 10 % which equates to 3.5 months delay for a CAPEX 25 % which equates to £ 62.7 million costs for a 3.5 months delay for a

It is concluded that the the Optimism Bias has been reduced by
It is concluded that the the Optimism Bias has been reduced by

1.6 months since reported in STAG and Preliminary Financial Case

1.6 million costs since reported in STAG and Preliminary Financial Case



RESPONSIBILITIES

The responsibilities for ensuring that the actions identified to mitigate the risk exposure have been identified in the risk register, and detailed as follows.

Actionee	Company/Group	Person Responsible
tie (UM)	tie Utilities Manager	Tom Blackhall
tie (TRO)	Traffic Regulation Order Group	Ann Faulds (Dundas & Wilson)
tie (PRO)	Procurement Group	lan Kendali
tie (PR)	PR & Communication Group	Lesley Clark (Weber Shandwick)
tie (PPM)	tie Project Programme Manager	David Ramsay
tie (PMs)	tie Project Managers	Kevin Murray (Line 1) & Geoff Duke (Line 2)
tie (PD)	tie Projects Director	Alex Macaulay
tie (PAL)	Property and Land Group	Matthew Edgar (Colliers CRE)
tie (PAE)	Planning and Environment Group	Ray McMaster (Dundas & Wilson)
tie (OME)	Objection Management and Evidence Group	Trudi Craggs (Dundas & Wilson)
tie (MAD)	Modelling and Demand Group	Jeff Knight
tie (FD)	tie Financial Director	Graeme Bissett
tie (CM)	tie Cost Manager	Gerry Henderson
tie (CFM)	tie Corporate Finance Manager	Pat Diamond
tie (CEO/Chair)	tie Chief Executive/Chairman	Michael Howell
TET	Transdev Edinburgh Trams	Jim Harries
MM	Mott MacDonald	Gary Turner
FM	Faber Maunsell	Doug Blenkey
CEC	City of Edinburgh Council	Ewan Kennedy
DLA	DLA	Andrew Fitchie

For Distribution Purposes it is noted that MM/FM request the additional distribution, as follows.

Andrew Oldfield, MM Project Manager (line 1) Gavin Murray, FM Project Manager (line2) Michael Lax, FM Project Manager (line 3)



DEFINITIONS

The significance of each risk will be classified by means of a 5-point AS/NZS system for combining 'impact' and 'likelihood' aspects of each risk in order to prioritise actions.

The following financial and programme tolerances are proposed.

Level	Impact	CAPEX (£)	OPEX/ Life-cycle/ Revenue (£ per annum)	Programme
1	Insignificant	Up to £25k	Up to £25k	Up to 1 week
2	Minor	>£25k to £100k	>£25k to £100k	>1 week to 2 weeks
3	Moderate	>£100k to £500k	>£100k to £500k	>2 weeks to 1 month
4	Significant	>£500k to £1m	>£500k to £1m	>1 month to 3 months
5	Major	>£1m	>£1m	>3 months

The following range of likelihoods are proposed

Level	Likelihood
1	Remote
2	Unusual
3	Possible
4	Probable
5	Expected

The likelihood of risks and impacts can be combined in a 2-dimensional table as follows

Likelihood/ Impact	Insignificant	Minor	Moderate	Significant	Major
Remote	1	2	3	4	5
Unusual	2	4	6	8	10
Possible	3	6	9	12	15
Probable	4	8	12	16	20
Expected	5	10	15	20	25

The following significance of risk has bee adopted.

Significance	Range	Colour
Negligible Risk	>=0 <4	WHITE
Low Risk	>=4 <8	WHITE
Medium Risk	>=8 <12	ORANGE
High Risk	>=12 <16	ORANGE
Very High Risk	>=16	RED

Mitigation Factor Description

0.0 Risks are not mitigated 0.0 to 1.0 Partial mitigation of risks All risks are fully mitigated 1.0

- Generic TIE Strategic Risk Generic TIE Project Risk
- 2
- 3 Generic Tram Project Risk
- Specific Tram Project Risk