

Johnson Street Bridge Replacement Project - Risk Registry

July 15, 2012

| Type of Risk | Likelihood | Impact | Risk Level | Risk Description | Done? | Person Resp. | First Mitigating Deliverable | Second Mitigating Deliverable | Third Mitigating Deliverable | Fourth Mitigating Deliverable |
|------------------|------------|--------|------------|--|-------|--------------|---|---|--|---|
| STRATEGIC | | | | | | | | | | |
| Strategic | 1 | 3 | Med | No agreement reached between MMM and City | N | JM/DK | Extend Limited Notice to Proceed | | | |
| Strategic | 2 | 2 | Med | We have missed a risk! | N | JM | Quarterly update of risk registry | | | |
| Strategic | 1 | 2 | Lower | City: Federal Government reporting system re: \$21 m grant | Y | BW | Accounting staff familiarized with Federal requirements. Specific accounting staff and Project accountant are restricted to entry JSB info into SIS system. | Work with federal staff to correct mistakes. | | |
| Strategic | 1 | 2 | Lower | Disputes with Federal Government over inaccurate cash flow projections | N | DK | Fed/City Committee co-management committee established. More frequent and accurate reporting structure | Annual cashflow projection updates. | Ask Contractor for cashflow projects. | |
| Strategic | 1 | 2 | Lower | Union Vs Non union (awards) Contractors protests | N | DK | | | | |
| Strategic | 1 | 1 | Lower | CMHC Financing: Construction start by March 23 2011 | Y | DK | Early works contract to initiate project in 2011. | Complete funded work within one year: Clearly defined scope. | | |
| Strategic | 1 | 1 | Lower | Delay over Insurance Placement | Y | BL | Set deadline for decision on insurance coverage, and follow through on decision | | | |
| Strategic | 2 | 3 | Med | Regulatory approvals obtained too late - delays construction start | N | JM | Tracking table for key permits | Download certain permitting responsibilities to Contractor. | Regular monitoring of permitting consultant. | Post permit tracking table in dataroom. |
| PLANNING | | | | | | | | | | |
| Planning | 2 | 2 | Med | Insurance coverage: Cost and type | Y | BL | Investigate options, including independent advisor. | Decision based on cost/benefit analysis. | | |
| Planning | 1 | 2 | Lower | TBL: Cost of disposing of old bridge | N | JM/DS | Use same requirements as for rail bascule removal. | Incorporate some elements of the existing substructures into new-build | | |
| Planning | 1 | 1 | Lower | City: Finding/buying/leasing land for temporary rail station | N | DK | Determine acceptable strategy with City planning Department, Via Rail and Island Corridor Foundation | Land acquisition (lease or buy?) if required. | Railstops outside City limits. | |
| Planning | 2 | 2 | Med | Scope changes resulting from adjacent developments | N | DK/JM | Coordination during planning phases of adjacent projects, | Negotiate scope changes with developer to cover additional costs if required. | Disclosure in contract of adjacent projects. | |
| Planning | 2 | 3 | Med | Loss of schedule float | N | DK/JM | Manage schedule | | | |
| DESIGN | | | | | | | | | | |
| Design | 2 | 3 | Med | Geotechnical program delays - piers + fendering estimates, designs | N | JM | Find a Barge quickly! | | | |
| Design | 2 | 2 | Med | Road and civil work: E. Approach utilities and services | N | DK | Early identification and location utilities at East Approach | Design adjustments to reflect outcome of investigation | | |
| Design | 3 | 2 | Med | Road and civil work: Landscaping scope | N | DK | Manage budget and expectations | Plan on minimum and add to scope if budget permits | | |

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| Design | 1 | 2 | Lower | Other: Assess risk of access in rolling mechanism . e.g Banners, containment, signage...etc | N | JM | Engineering due diligence: safety issues integrated into design | | | |
| Design | 1 | 1 | Lower | Navigation Channel Width NOT A RISK | Y | JM | Make sure that the channel width is compliant with regulations and is approved | | | |
| Design | 3 | 2 | Med | Steel design too complicated - drives up prices | Y | JM | Review of design by fabricating specialist | Procurement process to optimize design. | PDR estimate based on quotes from fabricators that reviewed the PDR drawings. | |
| Design | 2 | 2 | Med | Life cycle costs are higher than anticipated. | Y | JM | Review all optimization proposals against life cycle costs. | | | |
| FINANCIAL | | | | | | | | | | |
| Financial/ Economic | 3 | 3 | High | Realistic accuracy of estimate | N | JM | Re-estimate project after Project Definition Report. | Indicative price check. | Optimization of designs as part of the procurement process to allow cost management. | |
| Financial/ Economic | 2 | 4 | Med | Steel supply and fabrication price increase. | N | JM | Monitor steel cost projections and advise if there is a change. | Award sooner rather than later to minimize escalation risks. | | |
| Financial/ Economic | 1 | 2 | Lower | Contribution agreement with Federals not signed yet - UBCM | N | DK | Follow-up with UBCM. | | | |
| Financial/ Economic | 1 | 1 | Lower | City staff costs | Y | BW | Ensure City project support staffing and associated costs are identified. JSB reporting and account structure identifies City staff costs. | Sources of funding found to cover these costs | Communication of Full project budget, vs. Design and Construction only | |
| Financial/ Economic | 1 | 1 | Lower | Eligible costs | N | BW | Ensure appropriate accounting and cost allocation. JSB reporting and account structure identifies eligible costs. All PO's and work orders are created within the JSB account structure. | | | |
| Financial/ Economic | 2 | 2 | Med | Construction cost escalation | N | JM | Monitor construction costs and report trends. | | | |
| Financial/ Economic | 1 | 3 | Med | Unable to claim all eligible funds from Federal Government due to contractor's delay | N | JM | Appropriate liquidated damages to cover any loss of Federal funding. | | | |
| PROCUREMENT | | | | | | | | | | |
| Procurement | 2 | 2 | Med | Delay in award of construction contract. | N | DK | Process flow chart to map put award process. | | | |
| Procurement | 2 | 3 | Med | General: Global sourcing: long range barrier. Financial stability of supplier. Limited legal recourse. Different standards | N | DS | Contract administered under BC law. | Appropriate standards for all technical matters, and compliance certification required in contract | Appropriate quality management system requirements. | |
| Procurement | 2 | 2 | Med | New Bridge: Contracting Strategy can introduce more risk | N | TZ | Retain advice on the options and process | | | |
| Procurement | 1 | 4 | Med | Lack of Qualified bidders or submissions | Y | DK | Prequalification process including advertizing | Engage international vendors through MMM and others | | |
| Procurement | 1 | 1 | Lower | Legal challenges to any contract award | N | TZ | Follow bidding process and utilize fairness monitor | Utilize a participation agreement | Communication of process and intent before bidding | Debriefing of unsuccessful bidders |
| Procurement | 3 | 3 | High | Designer/contractor disputes over design optimization - change orders | N | TZ | Clear contract terms. | "Connect" Designer/City and Contractor/City contracts. | Develop robust collaborative meetings process. | |

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| Procurement | 2 | 4 | Med | Indicative pricing exceeds affordability ceiling | Y | All | Use procurement process to encourage optimizations to bring the final price within the affordability | Revise project scope. | Revise procurement. | |
| Procurement | 2 | 4 | Med | Loss of Proponent - breach of confidentiality | N | TZ | Confidentiality agreements. | Restricted reporting. | RFP to allow for addition of new proponent | |
| Procurement | 1 | 4 | Med | Loss of Proponent - response to commercial terms | Y | TZ | Ensure fair terms and conditions in draft contract. | Collaborative meetings to review commercial concerns. | | |
| CONSTRUCTION | | | | | | | | | | |
| Construction | 2 | 3 | Med | Changed site conditions claims | N | JM | Risk assessment followed by appropriate site investigation (detailed geotechnical, contaminated soils and archeological site investigations) | Contract language to adress changes. | | |
| Construction | 2 | 2 | Med | Traffic management plan does not adequately address issues | N | DS | Appropriate contract language. | Clear list of constraints regarding traffic requirements. | | |
| Construction | 1 | 2 | Lower | Environmental management plan inadequate | N | JM | Appropriate contract language. | | | |
| Construction | 4 | 2 | Med | Contaminated soil risk | N | JM | Identify extent of problem | Develop contaminated soils management plan. | Design to encapsulate in fill if permitted | |
| Construction | 4 | 2 | Med | Impact to neighbors-greatest during construction. (noise, traffic, loss of business, impeded access) | N | KJ/DS (contract language) | Communications. | Appropriate contract language to mitigate inconveniences. | | |
| Construction | 4 | 2 | Med | Short term traffic impacts during construction | N | DS | Appropriate traffic management plan in place | Coordinate with other City activities | | |
| Construction | 1 | 4 | Med | Delay in Telus relocation. | N | PM | Contract between Telus and City specifying completion dates for Telus. | Engage with Telus at senior level regarding schedule management. | | |
| Construction | 2 | 3 | Med | Damage to existing bridge during construction by Contractor's operations. | N | PM | Appropriate contract language to make Contractor responsible for fixing any damage he causes. | Do not specify construction methods. | | |
| Construction | 3 | 1 | Med | Deficiencies | N | DS | Inspections | Deficiency management plan required in Contract with appropriate holdback provisions | | |
| Construction | 2 | 3 | Med | Environmental accident (spills, etc.) | N | DS | Contract provisions: processes to mitigate risk required in contracts with GC | Insurance coverage | | |
| Construction | 2 | 3 | Med | Existing Bridge Fails: schedule acceleration required | N | DK/DS | Continued maintenance and inspection of existing bridge: establish a baseline and monitor afterwards, with contingency plan for emergency repair. | Use of existing bridge defined - and restrictions identified - in GC Contract. | | |
| Construction | 2 | 3 | Med | Physical accidents on site, shuts down site | N | GC | Safety issues delegated to the Contractor of Record (Prime Contractor) | | | |
| Construction | 2 | 3 | Med | Road and civil work: Blasting for road | N | JM | Identify where rock is (borehole) | Adjust road profile if possible | Rip or blast if needed - needs to be reflected in specs. | |
| Construction | 2 | 3 | Med | Unusually bad weather | N | GC | Clarity in Contract regarding weather risk | | | |
| Construction | 2 | 2 | Med | Adjacent buildings damaged during construction | N | GC | Appropriate contract language. | Pre-review by contractor of affected buildings. | | |
| Construction | 2 | 2 | Med | Bascule pieces do not fit/work | N | JM | Design coordination | Quality control in design, fabrication and construction | | |

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| Construction | 2 | 2 | Med | Commissioning problems | N | JM | Allow extra time for commissioning | Care in review of shop drawings and assembly process | Extra care and checking of pre-installation site preparation (embedded metals, pits and trenches etc) | |
| Construction | 2 | 2 | Med | De- commissioning Rail bridge. Risk of delay and miss fisheries window | Y | PM | Rail and Telus duct related | Accelerate relocation of rail station | Fit to fisheries windows | |
| Construction | 2 | 2 | Med | Delay in delivery of key components | N | JM | Early contract award. | | | |
| Construction | 2 | 4 | Med | Delay-causing disputes between owner, designers and contractors. Financial, performance, progress, etc. | N | TZ | Dispute resolution system established and agreed to by all parties | Contract language: Holdbacks, Bonding. | Management system for addressing routine problems before they become a dispute | |
| Construction | 2 | 2 | Med | Issues with constructability. | N | JM | Close collaboration with Proponents | Proponent selection based on factors including experience, and compatibility with MMM | | |
| Construction | 2 | 1 | Lower | Complaints about Noisy Work | N | KJ/DS | Communicate with neighbours | Contractor managed - so include appropriate terms in the Contract. | Have a baseline noise level recorded and documented | Noise bylaws confirmed and ensure they are being met by the plan |
| Construction | 1 | 4 | Med | Archaeological work (possibility remains) | N | Johnny Hall | Dig another test pit on West side | Follow permit protocol. | | |
| Construction | 2 | 4 | Med | Miss Fish Window: Can only be in water July 1- Oct 1, Dec 1- Feb 15 | N | DK | Early award | Plan to work within legal requirements | Follow through with all suppliers and contractors | |
| Construction | 1 | 3 | Med | Safety risk during construction: 4000 Pedestrians. 3000 Cyclist now on road and sidewalk. | N | GC | Good traffic management plan by contractor during construction | Good communication plan regarding detours and other constraints | Source staging areas and maximize detour space and flexibility on site | |
| Construction | 1 | 2 | Lower | Buy-in from Marine Users group with regard to allowable closures. | N | DK/JM | Coordination with Marine Users in advance of contract to identify constraints. | Contract language to reflect marine users requirements. | | |
| Construction | 1 | 2 | Lower | Serious Vandalism and Theft | N | GC | Site security | | | |
| Construction | 2 | 2 | Med | Late delivery of construction materials | N | JM | Early award. | Review of contractor's schedule to confirm sufficient float. | | |
| Construction | 1 | 3 | Med | Non-compliance with Worksafe BC | N | DS/GC | EH&S plan submission requirements in contract. | High light lead paint requirements when flame cutting existing bridge | | |
| Construction | 2 | 4 | Med | Schedule delay by City | N | PS | Ensure City approvals are timely. | Appropriate delegation of authority. | | |
| Construction | 2 | 3 | Med | Schedule delay by consultant | N | JM/DK | Confirm that design schedule and procurement/construction schedule are coordinated. | | | |
| Construction | 3 | 2 | Med | Schedule delay by contractor | N | JM | Early award. | Review of contractor's schedule to confirm sufficient float and that ity/Consultant requirements have been considered. | Contract should have language to require schedule recovery process by Contractor. | |
| Construction | 2 | 3 | Med | Unexpected site conditions | N | JM | Due diligence ahead of contract award. | | | |
| Construction | 2 | 3 | Med | Utility relocation schedule (Northern Junk/Janion) delays project | N | DK | Identify City utility needs. | Early dialogue with utilities owners and developers. | Coordination of Project and utility schedules. | |
| POLITICAL | | | | | | | | | | |
| Political | 2 | 4 | Med | Decision on Rail in Scope | Y | PS | Set Deadline of Jan 31 2011 | Impact of decision clearly communicated to decision-makers including DELAY and COST | Proceed with a Charter that has no Rail and maintains ROW | |
| Political | 2 | 4 | Med | Tactical reactions to situations interfere with Bridge Execution Strategy | N | DK | Charter sets Governance and Response plan to Public and other concerns | Project communications plan: Proactive updates (see other PR mitigations) | Manage expectations of stakeholders regarding involvement in details of design. | |

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| Political | 2 | 3 | Med | Scope of Project changes without budget and schedule adjustment | N | PM | Project Definition Report signed off by City and MMM. | Discipline of good Change Management | Good collaborative relationships with Consultants and Contractors. | Dispute resolution mechanism established and committed to by all engaged parties. |
| Political | 2 | 2 | Med | Publication of overly optimistic completion date | N | JM | Publish Contractor's completion date in accordance with their approved schedule. | Monitor schedule for changes and need for schedule recovery plan. | Set requirements for earlier completion of Bascule bridge and access roads and pathways. | Possibly require earlier date for Bascule bridge component and pre-commissioning |
| Political | 2 | 1 | Lower | Change of Council Members | N | PS | Brief new councillors on project history and requirements. | Continue to provide Council with regular updates. | | |
| Political | 1 | 2 | Lower | Missinformation | N | KJ | Proactive communications regarding the progress and realities of the project: good PR and Public engagement plan. | Formal responses to missinformation | Formal complaints process for public and used by ALL, including Council members | Media Communications Plan |
| COMMUNICATIONS | | | | | | | | | | |
| Community | 3 | 1 | Med | External Communication breakdown | N | KJ | Develop a project communication strategy | Continue to use the Web site, press releases... | Proactive disclosure of information | Contracts/bid documents to disclose publication policy of City |
| Community | 2 | 2 | Med | Special Interst Groups cause delays | N | KJ | Continued proactive communication. | | | |
| Community | 2 | 2 | Med | Inadequate internal City communication | Y | PS | Communication strategy in place by end February 2011 | Communication resources dedicated to the project team | | |
| Community | 1 | 1 | Lower | Challenge of referendum results | Y | TZ | | | | |
| Community | 4 | 1 | Med | Project team workload disruption resulting from excessive FOI requests | N | DK | Good record management in place | Proactive disclosure - information on the web site | Well defined process to meet FOI obligations | Ensure requests are appropriate. |
| Community | 1 | 1 | Lower | High Expectations. Little VISIBLE progress apparent. | N | KJ | Ongoing communications. | | | |
| Community | 1 | 1 | Lower | Island Corridor Foundation Resistance | N | DK | Consultation with ICF. | Agreement in place between ICF and City of Victoria. Specifically waive notice period (if still applicable). | | |
| Community | 2 | 3 | Med | Public dissatisfaction with final design. | N | PS/TZ | Communication regarding scope and budget as well as value for money on contract award. | Legal opinion on compliance with Referendum requirements re: final design. | | |
| ORGANIZATIONAL | | | | | | | | | | |
| Organizational | 3 | 2 | Med | City: Costing Software : integration with city financial system | Y | BW | Determine needs of City. Use of JDE financial and Qwestica budget software to manage the financial | JSB account structure customized to use the strengths of the JDE and Webapp reporting tools | | |
| Organizational | 1 | 2 | Lower | Accounting process creates issues/challenges | Y | BW | Establish an appropriate accounting system compatible with Federal and project requirements. | Ensure P.O's are issued for elements. | | |
| Organizational | 2 | 3 | Med | General: Monthly costs are directly related to duration | Y | DK | Establish realistic and achievable schedule and cash flow. Customized JSB financial reports will identify monthly variances. | Rigorously manage to established and agreed milestones | | |
| Organizational | 1 | 1 | Lower | Internal (project team) Communications break down | N | DK | Org Chart for project including roles, responsibilities and decision-making | Communications plan - internal and external | Schedule of regular meetings, reporting and other key communications | Develop close working and communication relationships with rest of team: consultants, contractors etc. |
| Organizational | 2 | 2 | Med | Loss of key players or consultants | N | DK | Good project documentation incl: decision logs etc... | Good records management for City of Victoria | | |

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| Organizational | 2 | 2 | Med | Unresolvable disagreements between MMM group and Contractor | N | TZ | Appropriate back-to back language between City/Contractor and City/Designer contracts, | Dispute resolution mechanism built into contract. | | |
| Organizational | 1 | 3 | Med | Project Approval Delay by City | N | DK | Timely submission to Council for required approvals. | Continue updating Mayor and Council on project status. | | |
| Organizational | 1 | 3 | Med | Strike by City employees, or by trades or others | N | PS | Identify potential of strikes and labour negotiations pending with stakeholders | ACCEPT THIS RISK AS BEING OUT OF CONTROL OF THE CITY | | |
| Organizational | 1 | 2 | Lower | Capacity of City to handle the project (hours of resources and associated costs) | N | PS | Dedicated team identified and City adjusts to reduced capacity during life of project or backfills. | Contract out overload and essential expertise requirements | Reprioritize other tasks, projects and service levels to free up capacity where possible. | Develop a budget to cover these needs and make sure funds are available |

| Person Responsible | |
|--------------------|--------------------|
| GC | General Contractor |
| JH | Johnny Hall |
| KJ | Katie Josephson |
| DK | Dwayne Kalynchuk |
| BL | Bill Larkin |
| PM | Project Manager |
| JM | Joost Meyboom |
| DS | Didier Samouilhan |
| PS | Peter Sparanese |
| BW | Brenda Warner |
| TZ | Tom Zworski |