

# Green Line Risk Registry

TT2019-0245  
ATTACHMENT 2

Low	Willing to accept and monitor these risks since they have low likelihood of occurrence with minor consequences.
Medium	Recognizes these risks will probably occur and will have moderate consequences. Management will monitor and manage risks by implementing contingency plans to reduce the likelihood and impact of their occurrence.
High	Recognizes these risks are top priorities of critical importance to the organization. Management is spending more effort to manage and monitor these risks by implementing risk mitigation strategies to reduce the likelihood and impact of their occurrence.

Risk Category	#	Potential Risk Identified	Risk Rating	Mitigation	Risk Rating
			3/20/2019		11/11/2018
Financial	F1	The City of Calgary is unable to finalize the Ultimate Recipient Agreement with the Province of Alberta with terms that are acceptable to The City of Calgary.	Retired (Jan 30/19)	Negotiate with Province and escalate as required. <b>Risk Retired: URA Signed on Jan 30, 2019</b>	Medium
	F2	Final project will be delivered over budget.	Medium	Establish cost estimation, procurement, and cost control protocol to ensure rigorous review of project agreement through the RFP phase, and to ensure budget is controlled.	Medium
	F3	Other orders of government do not fulfill funding obligations for enabling works currently underway.	Low	Constant communication with other orders of government to discuss current status of projects and continual submission of invoices.	Low
	F4	Ineligible costs incurred may be larger than the available City of Calgary funding envelope as outlined in the Ultimate Recipient Agreement (URA).	Medium	Proactively monitor project forecast costs and trends. Work collaboratively between Finance and Project Controls to ensure early warning signs are raised and managed.	New Risk
Technical	T1	Shallow utility companies lack of resources to meet the demands of relocates in centre city.	Medium	Administration to develop a joint construction plan with utility owners; identify resource needs for earliest completion. Prioritize the required relocates in advance of the main contract.	Medium
	T2	Technical requirements necessitate the change to previously planned station location/ entrances if the single bore option is chosen.	Medium	Station Integration framework to be developed informing of the criteria required to achieve station integration, communication and engagement plan, expectation setting.	Medium
	T3	Geotechnical ground conditions must be investigated using specific methodology based on single or twin boreholes.	High	A safety and technical risk assessment will be conducted with contractor and City BU's including experienced GL management, fire department and EMO.	High
	T5	Tunneling under the Bow River and below/through downtown infrastructure has not been performed to this scale ever before in the City of Calgary.	High	Collaborative safety and technical risk assessment with contractor and City BU's including experienced GL management, fire department and EMO.	High
Construction	C1	Significant disruption to traffic, businesses, and communities during construction.	High (Moved from T4)	Ensure that specifications clearly outline acceptable traffic impacts. Develop Taking Care of Business strategy.	High
Legal	L1	Expiry of agreement(s) for relocation of utilities stopping utility relocation work.	Medium	The City is in the process of negotiating amending agreements with utility provider(s) to extend expiry dates. Negotiations are proceeding well.	High
	L2	Due to the scale and complexity of the Green Line project The City anticipates more conflicts of interest will arise due to scarcity of resources for individual specialists or due to multiple contractors performing work that overlaps in regard to both time and geography.	Medium	A Conflict of Interest Protocol – Green Line LRT Project has been developed. In accordance with the Protocol, a committee has been established to hear and determine conflicts of interest issues. The committee has set and complied with tight deadlines for providing decisions (3 days), unless it requires additional information from the parties affected by the conflict of interest.	Medium
	L3	Clarity concerning corporate risk tolerance, including bid response methodology and bid thresholds.	Medium	Proceed with the following steps: 1) Set risk tolerance and budget, and design to it 2) Bring closure to the design exercise and be clear about the findings (estimate at set risk tolerance, define budget ceiling, with the set risk tolerance, at what estimate are we willing to go to market) 3) Define response thresholds to total bid, either under or over budget ceiling. - Set decision making responsibility at appropriate levels within the organization to account for degree of risk.	New Risk
	L4	Failure to comply with multiple obligations under the Funding Agreement.	Low	The City has compiled a list of all obligations and assigned responsibility for the various categories of obligations to Green Line staff.	New Risk
	L5	Tight deadlines on contract with Canadian Pacific (CP) to complete programs of work	Medium	Assigned manager to oversee timely preparation of contracts and build relationship with CP to manage any issues that may arise.	New Risk
Procurement	P1	Scale of procurement contract minimizes meaningful competition from the construction market.	Medium	Market sounding and industry feedback coupled with procurement analysis to validate scale and risk transfer of specific procurement.	Medium
	P2	Protracted procurement process that frustrates the market and increases cost.	Medium	Maintain consistency with recent procurement timelines and market sensitivities to contract negotiations.	Medium
	P3	Selection of Downtown Tunnel Construction Method (Single Bore vs. Twin Bore) causes delay in RFQ/RFP.	Medium	Finalize review of tunnel bore option to provide clarity to procurement approach.	New Risk

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Access/Real Estate	A1	Required land is not available for contractor on financial close.	Merged with A3 and A5 Jan 2019	Acquisition program for all confirmed property requirements underway and Council approved delegated authorities in place to allow for timely approvals and expedient closing dates, wherever possible. Technical team advancing with finalizing design through tunnel section to confirm outstanding property requirements. Documenting all specific property requirements/exceptions to be included in the land schedule for the procurement documents.	Medium
	A2	Opportunities for station integration may be limited due to technical and financial barriers.	Merged with A3 and A5 Jan 2019	Ensuring technical solutions are identified and provided, wherever possible, to enable station integration in the immediate/near and future terms. Targeted communication and engagement plan, exploratory research and expectation setting.	High
	A3	Unable to obtain consensual agreements with all property owners within project timelines resulting in higher number of expropriations.	High	Prioritize resources on highest risk files, work with technical team to develop and implement acquisition strategies to encourage negotiated agreements. Preparing land schedule for inclusion in the procurement documents	New Risk
	A4	Negotiations unable to move forward in light of the constructability review and tunnel method decision in the Centre City.	High	Working with technical team to finalize design through the tunnel section and confirm property requirements. Developing an acquisition strategy to address the tunnel section and allow transactions to advance as early as possible.	New Risk
Environmental/Permitting	E1	Risk that CEA project description for the MSF triggers determination of federal EA required.	Medium	Early engagement with CEA to understand requirements; Maintain up-to-date information on CEA requirements; Proper planning and execution of permit requirements will help to mitigate schedule delays.	New Risk
	E2	Timelines to receive regulatory approvals through DFO, Transport Canada, Public Lands, and Water Act exceed expected timelines (as outlined in PLA matrix).	Medium	Pre discussions with regulatory bodies. Discussions to be documented and put into data room. Listing of known regulatory requirements in TPR. Participate in City of Calgary corporate capital project priority process with Alberta Environment and Parks (coordinated effort to not overburden regulatory bodies with requests).	New Risk
Safety	S1	The magnitude of the project will require a fast pace of construction integrated within several public communities carrying on with their daily routines. This inherently increases public exposure to construction hazards even with safety measures in place.	Medium	GL SMT and supporting resources to collaboratively participate in the development all aspects of safety in each of the respective areas to address stakeholder interaction with planned construction activities; and, participate in construction safety inspections to ensure public is aware of and following safety mitigative measures.	Medium
	S2	Pedestrians accessing stations at locations other than pedestrian crosswalks provided.	High	Public awareness with Community Relations group. Prime Contractors fencing and signing sites, as well as, situation awareness for trespassers.	New Risk
	S3	Delay for emergency response services including EMS, fire, and police due to reduced traffic capacity during construction of the LRT.	Medium	GL SMT to work with Fire Dept management to conduct hazard assessment and mitigative training/response plan which will be coordinated with tunneling, bridge and surface contractors during construction.	New Risk
HR	H1	The majority of City personnel are not experienced in underground tunnel and station construction to this scale which will present a steep learning curve and increased safety risks.	Medium	Ensure Managing Director is experienced in this scale tunnel construction contract management and has supporting resources to effectively manage the prime contractor for the project.	Medium
QA	Q1	Insufficient Quality Control and Assurance Program is in place impacting the design and construction of the project.	Low	Develop Quality Control and Assurance Protocol and require all stages of the project to adhere to the Protocol.	Low
Communications	M1	The City of Calgary is in the midst of exploring and defining it's indigenous strategy in a complex and changing environment.	Medium	First Nations Consultation required (e.g. funding condition) to understand their needs and determine best strategy.	New Risk
	M2	Stakeholders have an expectation of receiving updates on the Green Line project due to the high amount of engagement previously undertaken.	Medium	Ongoing updates to stakeholders is required to instill confidence, maintain trust and excite stakeholders/build advocates for the project.	New Risk

Note: Specific legal and financial risk are not included in the public register as the procurement process is competitive and confidential in nature.