

2019 Q2 Green Line Risk Registry

<b>Low</b>	Willing to accept and monitor these risks since they have low likelihood of occurrence with minor consequences.
<b>Medium</b>	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.
<b>High</b>	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
			6/19/2019		3/20/2019
<b>Financial</b>	F2	Final project will be delivered over budget.	Medium	Establish cost estimation, procurement, and cost control protocol to ensure budget is controlled. Retain Technical & Risk Committee to support early indicators of risk. Lower risk tolerance to ensure budget available to mitigate risks and to strengthen budget.	Medium
<b>Technical</b>	T3	Geotechnical ground conditions must be investigated using specific methodology based on single or twin bore.	High	A safety and technical risk assessment will be conducted with contractor and City BU's including experienced GL management.	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
<b>Construction</b>	C1	Significant disruption to traffic, businesses, and communities during construction.	High	Ensure that specifications clearly outline acceptable traffic impacts. Develop Taking Care of Business strategy.	High
<b>Legal</b>	L3	Clarity concerning corporate risk tolerance, including bid response methodology and bid thresholds.	Medium	Proceed with the following steps: 1) Set risk tolerance (P-score) 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, and let the market decide) 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 (e.g., GL BU, Executive Steering Committee).	Medium
<b>Procurement</b>	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 causes delay in RFQ/RFP.	Medium	Design specific evaluation criteria that sufficiently balances operational costs post construction to augment potential capital cost savings to assist in a balanced evaluation of either option if we go to market as non-decided. Design contractual language that minimizes specified tunneling technology integration with the documents.	Medium
<b>Access/Real Estate</b>	A5	Negotiations unable to move forward in light of the constructability review and tunnel method decision in the Centre City.	High	Seek opportunity to advance with an agnostic approach to meet needs for tunnel bore options and consider alternative construction methods. Working with technical team to finalize design through the city center and confirm property requirements. Developing an acquisition strategy to address the city center and allow transactions to advance as early as possible.	High
<b>Environmental/Permitting</b>	E1	Risk that CEA project description for the MSF triggers determination of federal EA required.	High	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.	High
	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).	Medium
<b>Safety</b>	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.	Medium	GL SMT and supporting resources to collaboratively participate in the development of 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.	High
<b>HR</b>	H1	The majority of City personnel are not experienced in mega project delivery and construction which will present a steep learning curve to deliver successfully.	Medium	Ensure Managing Director is experienced in this scale tunnel construction contract management and has supporting resources to effectively manage the delivery and construction for the project.	Medium
<b>QA</b>	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
<b>Communications</b>	M2	Stakeholders have an expectation of receiving updates on the Green Line project due to the high amount of engagement previously undertaken. There is a reputation risk if we do not continue to provide information to the public, as they will begin to lose confidence in our ability to deliver the project and may lose	Medium	Ongoing updates to stakeholders is required to instill confidence, maintain trust and excite stakeholders/build advocates for the project.	Medium

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