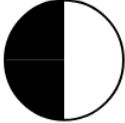


Scott Street Bridge Scenarios

Revised: October 27, 2020

OPTION	LEVEL OF IMPACT (BURDEN) ON CAPITAL BUDGET	ASSUMPTIONS	SCHEDULE	COSTS	BENEFITS	RISKS AND CHALLENGES	NOTES
1 – DO NOTHING (NO WORK); WAIT FOR RIVERWALK PROJECT	This option has lowest capital burden up front. 	- Riverwalk will proceed in the near future (starts 2022) - Scott St will remain closed to all vehicles - The bridge will remain open to pedestrian/bikers for now.	- Dependent on schedule of Riverwalk implementation. - Riverwalk decision will be made in summer 2021 earliest. - Bridge could be completed by 2023 if funding available to fast track the bridge - Estimated 2-3 year construction period for Riverwalk project.	Ongoing maintenance and frequent monitoring/ inspection cost to monitor the rate of the bridge deterioration over time	- Deferred capital expenditure - Minimized throwaway expenditure (associated with implementing temporary works). - Can still have access for pedestrians/bikers and other detour options for cars/trucks - Once permanent solution proceeds, will result least construction-related disruption to the residents	- Bridge to remain closed indefinitely to cars. - Bridge will still need to be monitored for failure - Bridge will continue to deteriorate and will remain as a liability to the City - Inconvenience to car traffic in the area - Will still require winter maintenance, manually. - Uncertainty in timing and funding amount for Riverwalk project as it depends on external funding (\$10M tax for entire project)	- Notification to residents required - More permanent closure, signage required at bridge.

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2 – COMPLETE MINOR TEMPORARY REPAIRS ONLY NOW; The repair will mainly include • Filling the major cracks with epoxy filler. • Clean the loose and spalled concrete and repair these areas • Wrapping the repaired and cracked areas with Carbon Fiber Reinforced Polymer (CFRP) in order to prevent further concrete deteriorations and cracks further propagation • Installation of monitoring systems FULL REPLACEMENT WHEN RIVERWALK PROCEEDS.	• This option has moderate up front capital costs. • Lowers the risk for failure but only for a few years (2-3 years). 	• That Riverwalk will proceed in the near future (starts in 2022) • That Scott St will remain closed to all vehicles with gross weight over 8.0 tonnes	• Summer 2021 for temporary repairs pending City's Council approval. • Design of permanent replacement will be done as part of Riverwalk project • Riverwalk decision will be made in year 2021 earliest. • Bridge could be completed by 2023 if funding available to fast track the bridge • Estimated 2-3 year construction period for Riverwalk project.	Approx. \$500K (\$400K construction + \$100K design/monitoring)	• Deferred capital expenditure and minimized throw-away costs • Bridge will be able to accommodate vehicles less that 8.0 tonnes.	• Costs are for temporary repairs only and will be throwaway once Riverwalk proceeds. • Repairs expected to extend the service life of the bridge for maximum 2-3 years. Riverwalk may not be underway by then so bridge may need additional work or to be closed again. Remains as a liability to the City • Enforcement for restricting larger vehicles may be an issue. • Manual winter maintenance depending on vehicle load • Multiple construction-related disruption to the residents; once for temp repairs and then again for Riverwalk solution • Uncertainty in timing for Riverwalk project funding.	Decision to be made if any other upgrades are to be included (scope creep)

OPTION (PREFERRED)	LEVEL OF IMPACT (BURDEN) ON CAPITAL BUDGET	ASSUMPTIONS	SCHEDULE	COSTS	BENEFITS	RISKS AND CHALLENGES	NOTES
3-REMOVE THE CONCRETE DECK AND KEEP THE ABUTMENT. INSTALL TWO LANE STEEL DECK BAILY BRIDGE FULL REPLACEMENT WHEN RIVERWALK PROCEEDS.	- This option has moderate up front capital costs. - Lowers the risk for failure for 7 -10 years 	That Riverwalk will proceed in the future but will be more than 5 years away	- Summer 2021 to start construction. Complete in 4 to 6 months. - Design of permanent replacement will be done as part of Riverwalk project - Riverwalk decision will be in year 2021 earliest.	\$1.2M for deck replacement	- Risk of bridge failure is managed; hence no further liability to the City - Bridge can be opened in late 2021 for full use by vehicles and service to the residents. - Solution will last for minimum 10 years. - When Riverwalk project finalized, ultimate bridge design can proceed. - No additional land acquisitions required.	- Higher throwaway costs if the project is to be replaced once the Riverwalk project proceeds. - Scope/cost will not be finalized until the bridge design is complete. - Multiple construction-related disruption to the residents; once for temp repairs and then again for Riverwalk solution <u>Design</u> cost may also throwaway as decision on Riverwalk may come before construction starts. - Optics of installing new bridge and then possibly replacing in a few years (less than 10 years). - No upgrades capacity of bridge or channel until Riverwalk project finalized	Decision to be made if any other upgrades are to be included per outcome of Riverwalk (scope creep)

OPTION (PREFERRED)	LEVEL OF IMPACT (BURDEN) ON CAPITAL BUDGET	ASSUMPTIONS	SCHEDULE	COSTS	BENEFITS	RISKS AND CHALLENGES	NOTES
4-REMOVE THE CONCRETE DECK AND KEEP THE ABUTMENT. INSTALL SINGLE LANE STEEL DECK BAILY BRIDGE FOR ACTIVE TRANSPORTATION ONLY. FULL REPLACEMENT WHEN RIVERWALK PROCEEDS.	- This option has moderate up front capital costs. - Lowers the risk for failure for 7 -10 years 	That Riverwalk will proceed in the future but will be more than 5 years away	- Summer 2021 to start construction. Complete in 4 to 6 months. - Design of permanent replacement will be done as part of Riverwalk project - Riverwalk decision will be in year 2021 earliest.	\$800K for existing deck replacement and installing active transportation only Baily bridge	- failure is managed; hence no further liability to the City - Bridge can be opened in late 2021 for active transportation services to the residents. - Solution will last for minimum 10 years. - When Riverwalk project finalized, ultimate bridge design can proceed. - No additional land acquisitions required.	- Higher throwaway costs if the project is to be replaced once the Riverwalk project proceeds. - Scope/cost will not be finalized until the bridge design is complete. - Multiple construction-related disruption to the residents; once for temp repairs and then again for Riverwalk solution <u>Design</u> cost may also throwaway as decision on Riverwalk may come before construction starts. - Optics of installing new bridge and then possibly replacing in a few years (less than 10 years). - No upgrades of the capacity of bridge rather reduced capacity or channel until Riverwalk project finalized	Decision to be made if any other upgrades are to be included per outcome of Riverwalk (scope creep)

OPTION	LEVEL OF IMPACT (BURDEN) ON CAPITAL BUDGET	ASSUMPTIONS	SCHEDULE	COSTS	BENEFITS	RISKS AND CHALLENGES	NOTES
5 – REMOVE AND REPLACE WITH LIKE-FOR-LIKE STRUCTURE; FULL REPLACEMENT WHEN RIVERWALK PROCEEDS.	Larger up-front capital cost that will be throwaway when Riverwalk proceeds however will eliminate failure risk. 	That Riverwalk will proceed in the future but will be more than 5 years away .	• Summer 2021 to start construction. Complete in 6 months to 1 year. • Design of permanent replacement will be done as part of Riverwalk project • Riverwalk decision will be in year 2021 earliest.	\$3-4M Construction; 100-150K additional design cost if undertaken under current assignment.	• Risk of bridge failure is managed; hence no further liability to the City • Bridge can be opened in late 2021 or early 2022 for full use by vehicles and service to the residents. • Solution will last for 75 years so not dependent on Riverwalk project to proceed. • No additional land acquisitions required.	• Higher throwaway costs if the project is to be replaced once the Riverwalk project proceeds. • Scope/cost will not be finalized until the bridge design is complete. • Multiple construction-related disruption to the residents; once for temp repairs and then again for Riverwalk solution • Design cost may also throwaway as decision on Riverwalk may come before construction starts. • Optics of installing new bridge and then possibly replacing in a few years (less than 10 years). • No upgrades capacity of bridge or channel until Riverwalk.	Decision to be made if any other upgrades are to be included per outcome of Riverwalk (scope creep)

OPTION	LEVEL OF IMPACT (BURDEN) ON CAPITAL BUDGET	ASSUMPTIONS	SCHEDULE	COSTS	BENEFITS	RISKS AND CHALLENGES	NOTES
6 – REPLACE NOW WITH THE RIVERWALK SOLUTION	Option has largest up-front capital cost with least amount of throwaway and eliminates the bridge failure risk and the least construction-related disruption to the residents 	This option assumes that Riverwalk will proceed sometime in the future. Assumes that the design of the Scott Bridge and the channel in that area will not change This option would become the preferred option is a decision on the scope is finalized and funding is available to proceed in early 2021.	If the design criteria are known by summer 2020, construction can be started by summer 2021 and can be completed in 1 year There may be delays due to the required land acquisition	\$10M (tax for City) including costs to acquire 10 Scott St.and TRCA channel costs. Funding would need to be made available immediately to begin the design and proceed to tender in early 2021.	• Risk of bridge failure is managed. Hence no further liability to the City • Bridge can be opened in 2022 for full use by vehicles and service to the residents. • Fully reconstructed bridge (with anticipated service life up to 75 years). • Channel capacity will be full and will be ready whenever Riverwalk proceeds. • Impose the least long term construction-related disruption to the resident. • Results in final and complete solution.	• Highest capital cost that would be required prior to EA completion • Bridge remains closed until work is done • Will have one-time major disruptions to the area. • Land acquisition of private property required (time and cost implications) • Once built, cannot change design without cost implications. • The design criteria should be finalized in close consultation with TRCA and the Riverwalk project. • Have to coordinate with TRCA for channel work; hence potential impact to the design/construction schedule.	Need to determine limits of project for tie in to existing. All parties to be fully involved in the design for a permanent solution.