
APPENDIX F

Alternative Assessment Matrix



Account/Subaccount	General Description	1 (Worst)	2	3	4	5 (Best)
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Natural Environment Account		Score	1 (Worst)	2	3	4	5 (Best)
Sub-Accounts		General Description	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor
Water Quality Risks		Relative potential to mitigate water quality impacts, including erosion during construction and sedimentation during flood events.	Highest risks to water quality due to construction and changes in storage characteristics within waterway	Large impact on water quality due to construction and changes in storage characteristics within waterway	Moderate impact on water quality due to construction and changes in storage characteristics within waterway	Small impact on water quality due to changes in storage characteristics within waterway	Limited to no impact of solution on existing water quality within Six Mile Creek and Tributary channels (Do Nothing)
Terrestrial Habitat, Wildlife Impacts		Relative potential to limit disturbance to trees and terrestrial habitat with footprint impacts for permanent works or construction access.	Highest potential terrestrial impacts due to construction footprint	Large potential potential terrestrial impacts due to construction footprint	Moderate potential terrestrial impacts due to construction footprint	Small potential terrestrial impacts due to construction footprint	Limited to no potential terrestrial impacts due to construction footprint (Do Nothing)
Vegetation Restoration		Relative potential to restore native vegetation and trees with relative amount of productive land to be restored	Limited to no potential to restore native vegetation and trees (Do Nothing)	Small potential to restore native vegetation and trees	Moderate potential to restore native vegetation and trees	Large potential to restore native vegetation and trees	Highest potential to restore native vegetation and trees enhancing Six Mile Creek Corridor
Aquatic Habitat, Fish Impacts (Risks)		Relative potential risks to fish and aquatic habitat due to construction activities, including downstream environments by limiting fish passage impacts.	Highest potential for impact to aquatic habitat due to construction activities with high risk of ESC failure or introduction of permanent fish passage barriers or impediments to access of fish habitat	Large potential for impact to aquatic habitat due to construction activities with high risk of ESC failure or introduction of permanent fish passage barriers	Moderate potential for impact to aquatic habitat due to construction activities with high risk of ESC failure or introduction of permanent fish passage barriers	Small potential for impact to aquatic habitat due to construction activities with high risk of ESC failure	Limited to no potential for impacts to aquatic habitat due to construction activities or changes to access to existing fish habitat (Do Nothing)
Climate Change Resiliency		Relative potential to provide additional hydrological and ecological resiliency (including drought resistance), through physical, hydrological, and ecological redundancy for buffering extreme events and seasonal climate shifts	Limited to no potential to provide additional climate change resiliency (Do Nothing)	Small potential to provide additional climate change resiliency, with low opportunities for physical, hydrological, and ecological diversity	Moderate potential to provide additional climate change resiliency, with flexible flood protection and moderate to low opportunities for hydrological and ecological diversity	Large potential to provide additional climate change resiliency, with high opportunities for physical, hydrological, and ecological diversity; targeted engineering solutions for adaptability	Highest potential to provide additional climate change resiliency, with optimized physical, hydrological, and ecological diversity, and redundant engineering

Socio-Cultural Account		Score	1 (Worst)	2	3	4	5 (Best)
Sub-Accounts		General Description	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor
Property Owner Acceptance		Relative potential to private and public land owners needs, including public relations acceptability and improved protection against flooding potential (meeting project goals and objectives)	Limited to no potential to fulfill requirements for owner's acceptance to provide flood protection and enhance natural system (Do Nothing)	Low potential to fulfill requirements for owner's acceptance to provide flood protection and enhance natural system	Moderate potential to fulfill requirements for owner's acceptance to provide flood protection and enhance natural system	High potential to fulfill requirements for owner's acceptance to provide flood protection and enhance natural system	Highest potential to fulfill requirements for owner's acceptance to provide flood protection and enhance natural system
Cultural Heritage Impacts		Relative potential to limit archeological and built heritage impacts, including consideration for cultural landscapes and significant features.	Highest potential for archeological and cultural heritage impacts due to construction footprint or long-term impacts from frequent flooding.	Large potential for archeological and cultural heritage impacts due to construction footprint or long-term impacts from frequent flooding.	Moderate potential for archeological and cultural heritage impacts due to construction footprint or long-term impacts from frequent flooding.	Small potential for archeological and cultural heritage impacts due to construction footprint or long-term impacts from frequent flooding.	Limited to no additional potential for archeological and cultural heritage impacts due to construction footprint (Do Nothing) or long-term impacts from frequent flooding.
Recreation and Greenspace		Relative potential to provide recreational amenities, trails, and navigability for physical connectivity through the study area; criteria assumes that greater levels of intervention provide declining potential due to reduced access to natural features.	Limited to no potential opportunity to provide increased ease of access (Do Nothing)	Small potential opportunity to provide increased ease of access (e.g., informal spaces for footpaths)	Moderate potential opportunity to provide increased ease of access (e.g., formal trails)	Large potential opportunity to provide increased ease of access (e.g., formal trails, access points, navigable waterway)	Highest potential opportunity to provide increased ease of access (e.g., formal trails, access roads, navigable waterway)
Public Safety		Relative potential to address public safety related to access/egress during flooding events	Limited to no potential to address public safety related to access/egress during flooding events (Do Nothing)	Small potential to address public safety related to access/egress during flooding events	Moderate potential to address public safety related to access/egress during flooding events	Large potential to address public safety related to access/egress during flooding events	Highest potential to address public safety related to access/egress during flooding events
Disruption		Relative potential to address disruption to traffic, businesses and residents during and after construction.	Limited to no potential to increase safety with no impact/disruption of traffic, businesses and residents during and after construction (Do Nothing)	Small potential to increase safety with no impact/disruption of traffic, businesses and residents during and after construction	Moderate potential to increase safety with no impact/disruption of traffic, businesses and residents during and after construction	Large potential to increase safety with no impact/disruption of traffic, businesses and residents during and after construction	Highest potential to increase safety with no impact/disruption of traffic, businesses and residents during and after construction

Account/Subaccount	General Description	1 (Worst)	2	3	4	5 (Best)
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Economic Environment Account		Score	1 (Worst)	2	3	4	5 (Best)
Sub-Accounts	General Description	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor
Capital Costs	Relative potential capital costs for engineering, construction and restoration (approximate order of magnitude costs for total solution ±\$#M provided for relative scale only)	Highest potential capital cost based on footprint, earthworks, and infrastructure complexity (>\$6M)	High potential capital cost based on footprint, earthworks, and infrastructure complexity (\$4-6M)	Moderate potential capital cost based on footprint, earthworks, and infrastructure complexity (\$2-4M)	Low potential capital cost based on footprint, earthworks, and infrastructure complexity (\$0-2M)	Lowest potential capital cost based on footprint, earthworks, and infrastructure complexity (\$0M)	
Maintenance/Lifecycle Costs	Relative potential maintenance and life-cycle costs; criteria assumes higher costs associated with higher complexity of engineering solution and capital costs.	Highest potential maintenance and life-cycle costs (>\$500K)	High potential maintenance and life-cycle costs (\$350-500K)	Moderate potential maintenance and life-cycle costs (\$200-350K)	Lowest potential maintenance and life-cycle costs (\$0-200K)	Limited to no potential maintenance and life-cycle costs (\$0K)	
Flooding Damages	Relative potential flood damages costs for private/public property owners (approximate order of magnitude costs for total solution ±\$#M provided for relative scale only)	Highest potential flood damages costs for private/public property owners (>\$6M)	High potential flood damages costs for private/public property owners (\$4-6M)	Moderate potential flood damages costs for private/public property owners (\$2-4M)	Low potential flood damages costs for private/public property owners (\$0-2M)	Lowest potential flood damages costs for private/public property owners (\$0M)	
Funding Sources	Relative potential to obtain Municipal/Provincial funding through Canada Community Building Fund, DMAF, Green Municipal Fund and Ontario Municipal Partnership Fund.	Limited to no potential to obtain Municipal/Provincial funding	Small potential to obtain Municipal/Provincial funding	Moderate potential to obtain Municipal/Provincial funding	Large potential to obtain Municipal/Provincial funding	Highest potential to obtain Municipal/Provincial funding	

Technical Environment Account		Score	1 (Worst)	2	3	4	5 (Best)
Sub-Accounts	General Description	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor	Descriptor
Flood Risk	Relative potential to mitigate long-term flood hazard risks within the study area based on floodplain and hydraulic conveyance capacity, including changes to storage characteristics of waterway.	Limited to no changes to flood hazard risks due to limited to no modifications to Six Mile Creek corridor (Do Nothing)	Small reduction in flood hazard risks	Moderate reduction in flood hazard risks with passive flood protection system	Large reduction in flood hazard risks with engineered flood protection system, surface water storage, and backflow prevention	Highest reduction in flood hazard risks with fully engineered flood protection system	
Constructability/Feasibility	Relative potential feasibility in terms of complexity and ease of implementation, especially based on technical challenges for geotechnical, hydraulic, geomorphological, ecological, and construction staging design.	Lowest potential feasibility based on highest technical design challenges	Low potential feasibility based on highest technical design challenges	Moderate potential feasibility based on highest technical design challenges	High potential feasibility based on highest technical design challenges	Highest potential feasibility based on highest technical design challenges (Do Nothing)	
Approvability	Relative potential for regulatory approval, consistency with municipal planning policies and accommodation of existing and future designated land use.	Lowest potential for regulatory acceptance (Do Nothing)	Low potential for regulatory acceptance	Moderate potential for regulatory acceptance and meeting EA expectation	High potential for regulatory acceptance and meeting EA expectation	Highest potential for regulatory acceptance and meeting EA expectation	
Functionality	Relative potential to fulfill project goals and objectives, specifically the potential to provide a holistic approach for addressing flood risk, erosion risk and accommodating future needs; criteria scoring assumes that the highest functionality is provided by a balance between flood protection and environmental impacts.	Lowest potential to fulfill project goals and objectives (Do Nothing)	Low potential to fulfill project goals and objectives with poor balance between engineering interventions to support a holistic approach	Moderate potential to fulfill project goals and objectives with fair balance between engineering interventions to support a holistic approach	High potential to fulfill project goals and objectives with good balance between engineering interventions to support a holistic approach	Highest potential to fulfill project goals and objectives with optimal balance between engineering interventions to support a holistic approach	

Six Mile Creek Flooding EA
Alternative Evaluation Matrix Weighting



Natural Environment	Criteria Weighting	Maximum Criteria Score	Category Weighting	Maximum Overall Score
Water Quality Risk	1	5	25	750
Terrestrial Habitat, Wildlife Impacts	1	5		
Vegetation Restoration	1	5		
Aquatic Habitat, Fish Impacts	1	5		
Climate Change Resiliency	2	10		
Total	6	30	25	750
Socio-Cultural Environment	Criteria Weighting	Maximum Criteria Score	Category Weighting	Maximum Overall Score
Property, Owner Acceptance	2	10	25	750
Cultural Heritage Impacts	2	10		
Recreation and Greenspace	1	5		
Safety and Disruption	1	5		
Total	6	30	25	750
Economic Environment	Criteria Weighting	Maximum Criteria Score	Category Weighting	Maximum Overall Score
Capital Costs	2	10	25	750
Maintenance and Lifecycle Costs	1	5		
Flooding Damages	2	10		
Funding Sources	1	5		
Total	6	30	25	750
Technical Environment	Criteria Weighting	Maximum Criteria Score	Category Weighting	Maximum Overall Score
Flood Risk	3	15	25	750
Constructability/Feasibility	1	5		
Approvability	1	5		
Functionality	1	5		
Total	6	30	25	750