

Appendix E – Evaluation of Alternatives

EVALUATION CRITERIA		Site 1 - Ice Control Structure		
		Alternative 1 - Do Nothing	Alternative 2 - Restore to As-Built Conditions	Alternative 3 - Rock Revetment & Armourstone Vane
		Score	Score	Score
Physical and Natural Criteria		1.38	1.25	1.75
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	3	4
Water Quality	Impact on water quality	2	2	2
Aquatic Habitat	Impact on contributing aquatic habitat	2	1	4
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	3	2	2
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	2	2
Social and Cultural Criteria		0.88	1.50	1.63
Public Safety	Impact on public safety	0	3	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	0	2	2
Benefit to Community	Access to trails, enjoyment of surrounding lands	1	2	2
Aesthetic Value	Impact on existing and proposed aesthetic value	2	3	3
Archaeological Impacts	Impact on lands that have archaeological potentials	4	2	2
Technical and Engineer Criteria		1.04	1.88	2.29
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	1	4	4
Constructability	Easiness to access, move equipment and construct	4	3	3
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	2	4
Economic Criteria		1.25	1.25	1.25
Capital Costs	One time capital cost	4	1	0
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	3	4
TOTAL SCORE		4.54	5.88	6.92

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 2 - Erindale Park Bank Restoration		
		Alternative 1 - Do Nothing	Alternative 2 - Armourstone Wall & Weirs	Alternative 3 - Armourstone Wall, Weirs & Trail Decommissioning
		Score	Score	Score
Physical and Natural Criteria		0.88	1.63	2.00
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	4	4
Water Quality	Impact on water quality	0	2	3
Aquatic Habitat	Impact on contributing aquatic habitat	0	2	3
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	4	2	4
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	3	3	2
Social and Cultural Criteria		1.25	1.88	1.75
Public Safety	Impact on public safety	0	3	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	0	2	1
Benefit to Community	Access to trails, enjoyment of surrounding lands	4	3	1
Aesthetic Value	Impact on existing and proposed aesthetic value	2	3	4
Archaeological Impacts	Impact on lands that have archaeological potentials	4	4	4
Technical and Engineer Criteria		1.25	1.67	1.88
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	1	3	4
Constructability	Easiness to access, move equipment and construct	4	2	1
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	1	3	4
Economic Criteria		1.25	1.25	1.25
Capital Costs	One time capital cost	4	1	0
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	3	4
TOTAL SCORE		4.63	6.42	6.88

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 3 - Credit Height Bank Restoration		
		Alternative 1 - Do Nothing	Alternative 2 - Armourstone Wall & Trail Realignment	Alternative 3 - Vegetated Buttress & Trail Realignment
		Score	Score	Score
Physical and Natural Criteria		1.00	1.38	2.13
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	3	4
Water Quality	Impact on water quality	0	2	4
Aquatic Habitat	Impact on contributing aquatic habitat	0	1	4
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	4	2	3
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	3	2
Social and Cultural Criteria		1.13	1.63	1.38
Public Safety	Impact on public safety	0	3	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	1	3	1
Benefit to Community	Access to trails, enjoyment of surrounding lands	4	3	2
Aesthetic Value	Impact on existing and proposed aesthetic value	0	2	3
Archaeological Impacts	Impact on lands that have archaeological potentials	4	2	1
Technical and Engineer Criteria		1.46	1.67	1.88
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	2	3	4
Constructability	Easiness to access, move equipment and construct	4	3	1
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	1	2	4
Economic Criteria		1.25	1.56	1.25
Capital Costs	One time capital cost	4	2	1
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	3	3
TOTAL SCORE		4.83	6.23	6.63

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 4 - Ashington Court Retaining Wall		
		Alternative 1 - Do Nothing	Alternative 2 - Armourstone Wall & Trail Resurfacing	Alternative 3 - Vegetated Buttress & Cantilever Bridge
		Score	Score	Score
Physical and Natural Criteria		1.00	1.63	1.38
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	3	4
Water Quality	Impact on water quality	0	2	2
Aquatic Habitat	Impact on contributing aquatic habitat	0	2	2
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	4	3	2
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	3	1
Social and Cultural Criteria		1.00	1.50	1.13
Public Safety	Impact on public safety	0	4	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	1	2	0
Benefit to Community	Access to trails, enjoyment of surrounding lands	2	1	0
Aesthetic Value	Impact on existing and proposed aesthetic value	1	2	3
Archaeological Impacts	Impact on lands that have archaeological potentials	4	3	2
Technical and Engineer Criteria		1.04	1.67	1.67
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	1	3	4
Constructability	Easiness to access, move equipment and construct	4	2	0
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	3	4
Economic Criteria		1.25	1.25	0.94
Capital Costs	One time capital cost	4	2	0
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	2	3
TOTAL SCORE		4.29	6.04	5.10

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 5 - Summit Court Slope		
		Alternative 1 - Do Nothing	Alternative 2 - Vegetated Buttress & Channel Realignment	Alternative 3 - Armourstone Retaining / Gravity Wall
		Score	Score	Score
Physical and Natural Criteria		0.63	1.25	1.75
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	3	4
Water Quality	Impact on water quality	0	3	3
Aquatic Habitat	Impact on contributing aquatic habitat	0	3	3
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	3	1	2
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	2	0	2
Social and Cultural Criteria		1.25	1.75	1.88
Public Safety	Impact on public safety	0	3	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	1	3	3
Benefit to Community	Access to trails, enjoyment of surrounding lands	4	2	2
Aesthetic Value	Impact on existing and proposed aesthetic value	1	4	3
Archaeological Impacts	Impact on lands that have archaeological potentials	4	2	3
Technical and Engineer Criteria		1.04	1.46	1.88
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	1	3	4
Constructability	Easiness to access, move equipment and construct	4	1	1
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	3	4
Economic Criteria		1.25	1.56	1.25
Capital Costs	One time capital cost	4	2	0
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	3	4
TOTAL SCORE		4.17	6.02	6.75

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 6 - Downstream Trails			
		Alternative 1 - Do Nothing	Alternative 2 - Raised Gravel Trail	Alternative 3 - Boardwalk	Alternative 4 - Trail Realignment
		Score	Score	Score	Score
Physical and Natural Criteria		1.13	1.25	1.50	2.13
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	2	3	4
Water Quality	Impact on water quality	0	2	3	4
Aquatic Habitat	Impact on contributing aquatic habitat	1	2	2	3
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	4	2	2	3
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	2	2	3
Social and Cultural Criteria		0.63	1.50	1.63	1.75
Public Safety	Impact on public safety	0	2	2	4
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	0	2	2	1
Benefit to Community	Access to trails, enjoyment of surrounding lands	0	3	3	2
Aesthetic Value	Impact on existing and proposed aesthetic value	1	2	3	4
Archaeological Impacts	Impact on lands that have archaeological potentials	4	3	3	3
Technical and Engineer Criteria		0.83	1.46	1.67	2.29
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	0	2	3	4
Constructability	Easiness to access, move equipment and construct	4	3	2	3
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	2	3	4
Economic Criteria		1.25	1.56	0.63	1.88
Capital Costs	One time capital cost	4	3	0	3
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	2	2	3
TOTAL SCORE		3.83	5.77	5.42	8.04

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 7 - Mid Trails			
		Alternative 1 - Do Nothing	Alternative 2 - Raised Gravel Trail	Alternative 3 - Boardwalk	Alternative 4 - Trail Realignment
		Score	Score	Score	Score
Physical and Natural Criteria		0.88	1.13	1.88	1.25
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	2	3	3
Water Quality	Impact on water quality	0	1	3	2
Aquatic Habitat	Impact on contributing aquatic habitat	2	2	3	2
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	1	1	4	2
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	3	2	1
Social and Cultural Criteria		0.63	1.38	2.00	1.25
Public Safety	Impact on public safety	0	2	3	3
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	0	2	2	1
Benefit to Community	Access to trails, enjoyment of surrounding lands	0	2	4	3
Aesthetic Value	Impact on existing and proposed aesthetic value	1	2	4	2
Archaeological Impacts	Impact on lands that have archaeological potentials	4	3	3	1
Technical and Engineer Criteria		1.04	1.46	1.67	1.67
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	1	2	3	4
Constructability	Easiness to access, move equipment and construct	4	3	2	1
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	2	3	3
Economic Criteria		1.25	1.25	0.63	1.56
Capital Costs	One time capital cost	4	2	0	2
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	2	2	3
TOTAL SCORE		3.79	5.21	6.17	5.73

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

EVALUATION CRITERIA		Site 8 - Upstream Trails				
		Alternative 1 - Do Nothing	Alternative 2 - Raised Gravel Trail	Alternative 3 - Boardwalk	Alternative 4 - Trail Realignment	Alternative 5 - Trail Hybrid
		Score	Score	Score	Score	Score
Physical and Natural Criteria		1.00	1.25	1.63	1.88	1.75
Erosion	Rate of erosion, slope failures, and loss of tablelands	0	2	3	4	3
Water Quality	Impact on water quality	0	2	3	2	3
Aquatic Habitat	Impact on contributing aquatic habitat	2	2	3	3	4
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	2	2	2	3	2
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	2	2	3	2
Social and Cultural Criteria		0.63	1.50	1.63	1.50	2.00
Public Safety	Impact on public safety	0	2	2	4	3
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	0	2	2	3	2
Benefit to Community	Access to trails, enjoyment of surrounding lands	0	3	3	0	4
Aesthetic Value	Impact on existing and proposed aesthetic value	1	2	3	2	4
Archaeological Impacts	Impact on lands that have archaeological potentials	4	3	3	3	3
Technical and Engineer Criteria		0.83	1.46	1.46	2.08	2.08
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	0	2	3	3	4
Constructability	Easiness to access, move equipment and construct	4	3	1	3	3
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	2	3	4	3
Economic Criteria		1.25	1.25	0.63	1.25	1.25
Capital Costs	One time capital cost	4	2	0	1	1
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	2	2	3	3
TOTAL SCORE		3.71	5.46	5.33	6.71	7.08

The ranking scheme ranged between 0 and 4. If a score of 0 was assigned then the preliminary alternative, for the criteria being considered, had a neutral/negative effect on the outcome. The scores of 1 through 4 relate to varying degrees of positive effect that the alternative would have on the outcome.

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact