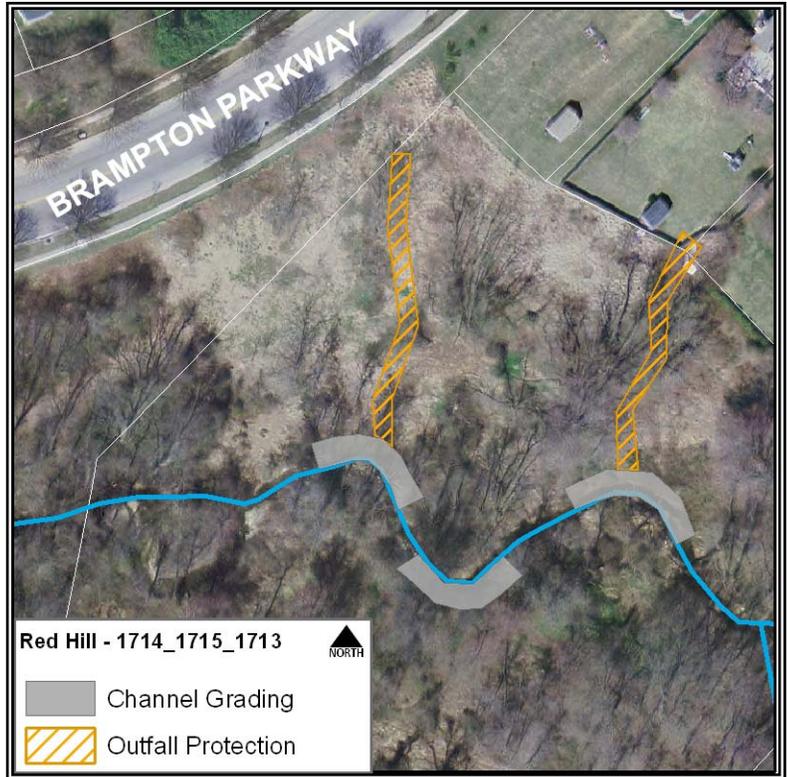


Proposed Project

Project Number: 1714_1715_1713
Subwatershed: Red Hill Branch

Project Type: Stream Restoration
Project Size: Approx. 500 linear feet

Project Location: Southwest of the intersection of Red Hill Way and Brampton Parkway.



Project Description: This project would entail regrading and stabilizing the stream banks along the outer meander bends containing erosion. The banks would be stabilized using bioengineering techniques to naturally protect the banks. The two storm drain outfalls draining into the channel should be stabilized in order to prevent further head-cutting to the existing channel. Repair to the storm drain outfalls will include connecting the outfalls with the floodplain to create a stream/wetland complex. This will help to provide stability and enhance the ecological function of the floodplain. This project contains other areas of localized erosion that appear to be less severe than the aforementioned locations; although it is likely the channel is naturally adjusting and has a high potential for natural recovery. Therefore, it is recommended that this project be monitored in order to better understand the degree of erosion and establish if a need for a full restoration exists. This would prevent unnecessary impacts to the riparian buffer and residential properties. The monitoring would include a geomorphic assessment and bank stabilization assessment.

Project Benefits:

- | | |
|---------------|---|
| Stabilization | The stream banks will be stabilized to reduce scour and migration of meander bends. The outfalls will be protected by controlling flows from the existing storm drains. |
| Water Quality | Implementation of this project will provide a reduction in sediment supply and the associated water quality benefits. |
| Education | The project could provide educational benefits due to the proximity of the project to adjacent residential areas. |

Project Constraints:

- | | |
|---------------|--|
| Environmental | Stream and wetland permitting will be necessary and stream closure periods may affect timing of work. Other potential permitting factors include impacts to forest and floodplain. No major environmental constraints are anticipated with this project. |
|---------------|--|

Proposed Project

Upper Little Patuxent

Property Ownership	This project is located on the Montgomery Estates, Brampton Hills, and Brookview Estates natural resource open space areas. This project may impact two existing Brampton Hills forest conservation easements managed by the Department of Recreation and Parks and private properties at 4861 and 4857 Red Hill Way.
Facility Access	Access to this site is obtained from Brampton Parkway.
Design / Construction	No major design or construction constraints are present.

Proposed Project

Upper Little Patuxent

Project Number: 1714_1715_1713
Subwatershed: Red Hill Branch

Project Type: Stream Restoration/Outfall Repair

Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL
Stream Restoration				
Stream restoration/stabilization ¹	235	LF	\$608.00	\$142,880
Buffer enhancement		LF	\$30.00	\$0
Outfall stabilization/protection	265	LF	\$100.00	\$26,500
			Direct Construction Subtotal	\$169,380
Indirect Costs				
E/SC, MOT, MOS (included above)				\$0
Construction Stakeout (2%)	1	LS	\$3,387.60	\$3,388
			Base Construction Cost	\$172,768
			Mobilization (10% of Directs or \$1,000)	\$16,938
			Subtotal	\$189,706
			Contingency (30%)	\$56,912
			Construction Subtotal	\$246,617
			Env't'l Studies / Permitting (5% of Construction or \$5,000)	\$12,331
			Engineering and Surveys	\$132,500
			Post-Construction Monitoring (\$40 / LF or \$4,000)	\$20,000
			Total Capital Cost	\$411,448
Operations and Maintenance Costs				
Annual Maintenance	5	Percent	\$8,469	
Discount Rate	5	Percent		
Expected Life	5	Years		
			Net Present Value of Annual Costs	\$36,666
			Life Cycle Cost	\$448,200

¹Cost per linear foot is based on linear regression of previous stream restoration/stabilization jobs ranging from 35 to 2215 linear feet.