

Summary of Capital and SNAP Projects in Markham Area of the Don River Watershed

No	Project Category	Project Name	Status	Estimated cost	Funding/Potential funding Source(s)	Remarks
1.	Sustainable Neighbourhood Retrofit Action Plan (SNAP)	i) Bayview Glen SNAP Project – This SNAP project will be implemented according to the following 4 phases: - Phase 1: Identify scope, baseline issues and opportunities. - Phase 2: Detail analysis of potential retrofits and community engagement. - Phase 3: Develop an implementation plan with funding recommendation. - Phase 4: Implementation of plan in the neighbourhood.	- Phase 1 - First community consultation at the Thornhill Community Centre is completed. - All technical workshops including Water, Energy & Climate, and the Renovator's workshop are completed. - Synthesis report is drafted. - Phases 2 and 3 are scheduled for 2013-14 subject to funding approvals by Council.	\$50 K (for Phase 1) \$350 K (for Phase 2&3) To be determined (for Phase 4)	City of Markham and Region of York. City of Markham, Region of York, Enbridge, Federation of Canadian Municipalities (FCM) and TRCA. To be determined (for Phase 4)	- The Sustainability Office is the lead on this project. - Areas of focus for this SNAP project are: stormwater management, water conservation, ecosystem integration with energy and climate, sanitary sewer I/I reduction. - Outcomes from Phase 3: community approval and commitment to implementation plan, scope of project defined, demonstration projects determined, partnerships and community retrofits in place, funding for retrofits in place. - Outcomes from Phase 3 will determine implementation costs and funding sources for phase 4.
2.	Flood Reduction	i) West Thornhill Stormwater Flood Remediation Class EA Study. ii) West Thornhill Flood Control Implementation.	Completed in 2011. In Progress. Phase 1, stage 1 construction will start in Q3/Q4, 2013.	\$500 K \$3.2 M	City of Markham City of Markham	- Timing for long term implementation (remaining stages and phases.) is contingent on funding. SWM Funding Study is underway. - Flood control recommendations include downspout disconnection that will provide water quality improvement, flood risk reduction and erosion control in the Don River. - Implementation of downspout disconnection (to storm sewers) is being considered as part of the Bayview Glen SNAP being consulted jointly with TRCA.

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3.	Erosion Control	iii) Don Mills Channel Flood Remediation Class EA Study.	- EA Study will commence in Q3, 2013. - Completion of this Class EA study will be subject to the results of the public meeting for the Stormwater Funding Study and further direction from Council.	\$300 K	City of Markham	- A financing strategy is being developed to identify funding for flood control remediation works in this area and City-wide (SWM Funding Study). - As part of an interim risk reduction strategy, flood proofing is proposed for vulnerable properties in this area and the City is currently in discussion with candidate property owners for a pilot project. - Identification of long term flood control alternatives and timing for implementation is contingent on funding. - Any redevelopment in this area will follow stringent SWM controls at the source to assist in flood reduction.
		iv) Flood Maps Update for the Don Mills Channel - Flood Emergency Response Plan.	Completed in 2012.	\$10 K	City of Markham	- As part of the flood emergency response plan, Don Mills Channel flood maps are incorporated in City-wide flood maps. - As part of Markham's flood risk reduction strategy, flood vulnerable structures and road are identified in the Don Mills Channels flood plain area.
		i) Pomona Mills Creek Erosion Restoration and Habitat Enhancement Class EA Study	Study was completed in 2010. Recommended restorations at an estimated cost of \$3.8M to be implemented in the following 5 phases: Ph-1: Restoration of 2 erosion sites:- - Site 1- located between Thornheights Rd. and Kirk Dr. - Site 2- located near Henderson Ave. immediately south of the Toronto Ladies' Golf Course. Completed in November 2008.	\$110.7K (Class EA Study Cost) \$588.7 k	City of Markham City of Markham (35%) and York Region (65%)	- There are some overlaps between the recommended erosion sites in the Pomona Mills Creek study and the City-wide Erosion Restoration Study. - Negotiation with private properties including the Glynwood property for the replacement of the historic dam is required prior to initiation of any restoration.
			Ph-2: Replacement of Thorny Brae Drive pedestrian crossing + removal of 2 metal weirs. Completed in October 2012.	\$830 K	City of Markham	

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			Ph-3: Restoration of one erosion site immediately north of the Toronto Ladies Golf Club (TLGC)+ removal of 3 metal weirs located between Royal Orchard Blvd. & the Toronto Ladies Golf Club and replace with rip-rap step pools channel bottom. Design awarded in November 2012. Restoration works – 2013/2014	\$800 k	City of Markham	
			Ph-4: Removal of 4 metal weir barriers : - Remove 2 metal weir barriers located south of Kirk Dr. - Remove 2 metal weir barriers located immediately north of Royal Orchard Blvd. Design awarded in 2013. Restoration works - 2013/2014	\$800 K	City of Markham	
			Ph-5: Replacement of 1 historic dam site in Pomona Mills park and replace with a new open bottom single span bridge + removal of 2 weir structures. Design and restoration - To be completed over the next 3-5 years subject to funding approval and agreement with the Glynwood property.	To be determined at project planning stage.	City of Markham	
		ii) Emergency Works in German Mills Settlers Park South of John Street.	- TRCA Restoration Services, on behalf of the City of Markham and Region of York designed and implemented temporary emergency slope stabilization and erosion control works in German Mills Settlers Park on the South side of John Street, west of Don Mills Road. - The temporary emergency work was completed early 2013. The full emergency work is proposed for completion by end of 2013.	\$269 K	Markham, Region of York, TRCA	- The City of Markham, York Region, and TRCA will share the total cost of this restoration. - Markham's share is 46% - Waiting for Council approval.

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		iii) City-wide Erosion Restoration Projects.	Original study was completed in 2007. New update study in on-going and will be completed by end of 2013. Original study recommended 300 sites with 30 top priority sites. To date 9 sites within the Don River Watershed of Markham area have been restored, 1 sites are on-going and 5 sites will be restored in the near future, subject to budget approval.	\$104 K	City of Markham	- Once the update study is completed, revised list of erosion restoration sites in the Don Watershed will be established and presented to Council for approval. - Staff will explore opportunities for cost sharing future restoration sites with Region of York, TRCA, private owners, etc.
			- Pomona Mills Creek at Kirk Drive south of the Holy Cross Cemetery – Completed in November 2008. - Pomona Mills Creek at Henderson - Completed in November 2008.	\$588.7 K	City of Markham and Region of York	
			East Don River at Steeles Valley Drive - Completed October 2009.	\$330.8 K	City of Markham	
			German Mills Creek at Leslie north of Steeles at 7015 Leslie Street - Completed December 2009.	\$315 K	City of Markham	
			German Mills Creek at Huntington Park - Completed 2010.	\$64.5 K	City of Markham	
			German Mills Crossing at Leslie Street - Completed December 2009.	\$205.4 K	City of Markham	
			Pomona Mills Creek at Thorny Brae Drive – Completed November 2012.	\$830.6 K	City of Markham	
			East Don - northwest corner of Proctor Ave and Bayview Ave – completed in 2012.	\$290.5 K	City of Markham	
			East Don - downstream of CN bridge (at 7360 Bayview Ave.) - Completed in 2013.	\$281.2K	City of Markham	
			Pomona Mills Creek upstream of John street, northern limit of Ladies Golf Course - Design awarded in November 2012. Restoration works 2013/2014.	\$800 K	City of Markham	

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4.	Stormwater Management (SWM) Pond Retrofit, Sediment Cleaning, Inspection and Maintenance		East Don River between Steeles Ave and Bay view - To be completed over the next 3-8 years subject to funding approval and agreement with private property owners.	To be determined at project planning stage.	City of Markham	
			East Don River Tributary upstream of Bayview Ave- To be completed over the next 3-8 years subject to funding approval and agreement with private property owners.	To be determined at project planning stage.	City of Markham	
			East Don River Tributary downstream of Proctor Ave- To be completed over the next 3-8 years subject to funding approval.	To be determined at project planning stage.	City of Markham	
			Pomona Mills Creek in Holy Cross Cemetery - To be completed over the next 3-8 years subject to funding approval and agreement with private property owners.	To be determined at project planning stage.	City of Markham	
			- Retrofit of the forebay berm and shoreline restoration - Completed in 2006 - Pond sediment removal - Completed September 2012.	\$180K \$695K	City of Markham	
		i) Glynnwood Pond Retrofit and Pond Sediment Removal.	Planned for 2015 subject to funding approval.	\$500K	City of Markham	- Estimated cost based on Life Cycle reserve study. - Retrofit opportunities for this pond will be investigated during the sediment cleaning time.
		ii) Sediment Cleaning of East Pond- Galleria Development (Pond ID: 9).	On-going and scheduled for completion by June 2013.	\$135K	City of Markham	- The purpose of the City-wide stormwater retrofit study is to identify potential retrofits for existing facilities to bring them to current standard as well as to identify potential locations for new facilities (areas without SWM). - Implementation will be subject to budget approvals.
		iii) City-wide Stormwater Retrofit Study (Update to the 1999 study).	Scheduled for every two year periodic inspection.	\$50K (for every two years)	City of Markham	As part of Life Cycle reserve study every two years City owned all SWM ponds will be inspected for condition assessment and identify maintenance requirements
		iv) City-wide SWM Ponds Inspection				

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						subject to budget and Council approval.
		v) City-wide SWM Ponds Operation and Maintenance	On-going and schedule for every year regular operation and maintenance.	\$25 K (each year)	City of Markham	\$25 K for each year is included in Life cycle reserve fund for implementation of maintenance requirements identified in inspection report for City owned all SWM ponds.
5.	Inflow/Infiltration (I/I) Reduction	i) Downspout Disconnection Program - Ph-1 in Thornhill Area.	Expected completion by 2015.	\$518K	City of Markham	Council Report regarding the Financial Assistant Plan for the downspout disconnection has been approved.
		ii) Citywide Multi-phase Sanitary System Downspout disconnection program including Thornhill area	Expected completion by 2020.	\$2.56 M	City of Markham	The Citywide Multi-phase Sanitary System Downspout Disconnection Program is estimated to have seven phases implemented over eight years. The program is anticipated to incorporate approximately 11,126 properties within City's high risk waste water based basement flooding areas. Please note that the number of phases, identified program areas, priority of the areas, and the overall program implementation time are subject to change based on the annual risk evaluation of different areas within the City taking into account the most up-to-date flow monitoring results, flood records and the improvement to the system due to other initiatives/program.
		iii) City wide Manhole Rehabilitation including Thornhill area.	Expected completion by 2016.	To be determined at project planning stage.	City of Markham	- City wide survey and establish remedial action plan for all sanitary sewer Manholes located within 100 year flood plain. - Capping some sanitary sewer manholes that are prone to higher incident of local water ponding.