Attachment "C" – Stormwater Program and Funding Comparison

Table 1 – Basis of Stormwater Funding and Billing System Comparison

Basis of Funding	Measurement Unit for Fees	Billing System and Example Cities
Property Taxes	Assessment (CVA)	**Tax Bill** Most Ontario municipalities fund stormwater activities through general revenues. In *The Foundations of a Competitive Canada* (2013), The Canadian Chamber of Commerce recommends consistent user fees for water infrastructure funding as opposed to general revenues.
Flat Fee per Property	Per Lot	**Water/Wastewater Bill** Aurora ON, Saskatoon SK (residential) **Water/Wastewater/Waste/Energy Bill** Calgary, AB, St. Albert, AB, Strathcona County, AB (some local pond surcharges), Richmond Hill, ON, London ON (small residential), St.Thomas, ON (residential), Richmond, BC, Surrey, BC
Size of Property (Runoff)	Area of Property	**Local Assessment** Most rural municipalities fund capital improvements to rural drainage (culverts and agricultural drains) based on contributing area assessments under Drainage Act (local assessment per individual property per drain) **Water/Wastewater/Energy Bill** London, ON (lrg. residential / non-residential > 0.4 ha), St.Thomas, ON (industrial), Edmonton, AB, Regina, SK
Impervious area of property	Measured Impervious Area	**Water/Wastewater/Waste/Energy Bill** Saskatoon, SK (non-residential), Kitchener, ON, Waterloo, ON, Victoria, BC **Water Bill** Mississauga, (Peel Region bill), Halifax Regional Municipality, approximately 836 US cities **Tax Bill** Approximately 283 US cities **Separate Bill** Approximately 59 US cities
Water Rate Surcharge	Water Use	**Water/Wastewater /Waste Bill** Toronto (includes combined sewer systems), Hamilton (includes combined sewer systems)

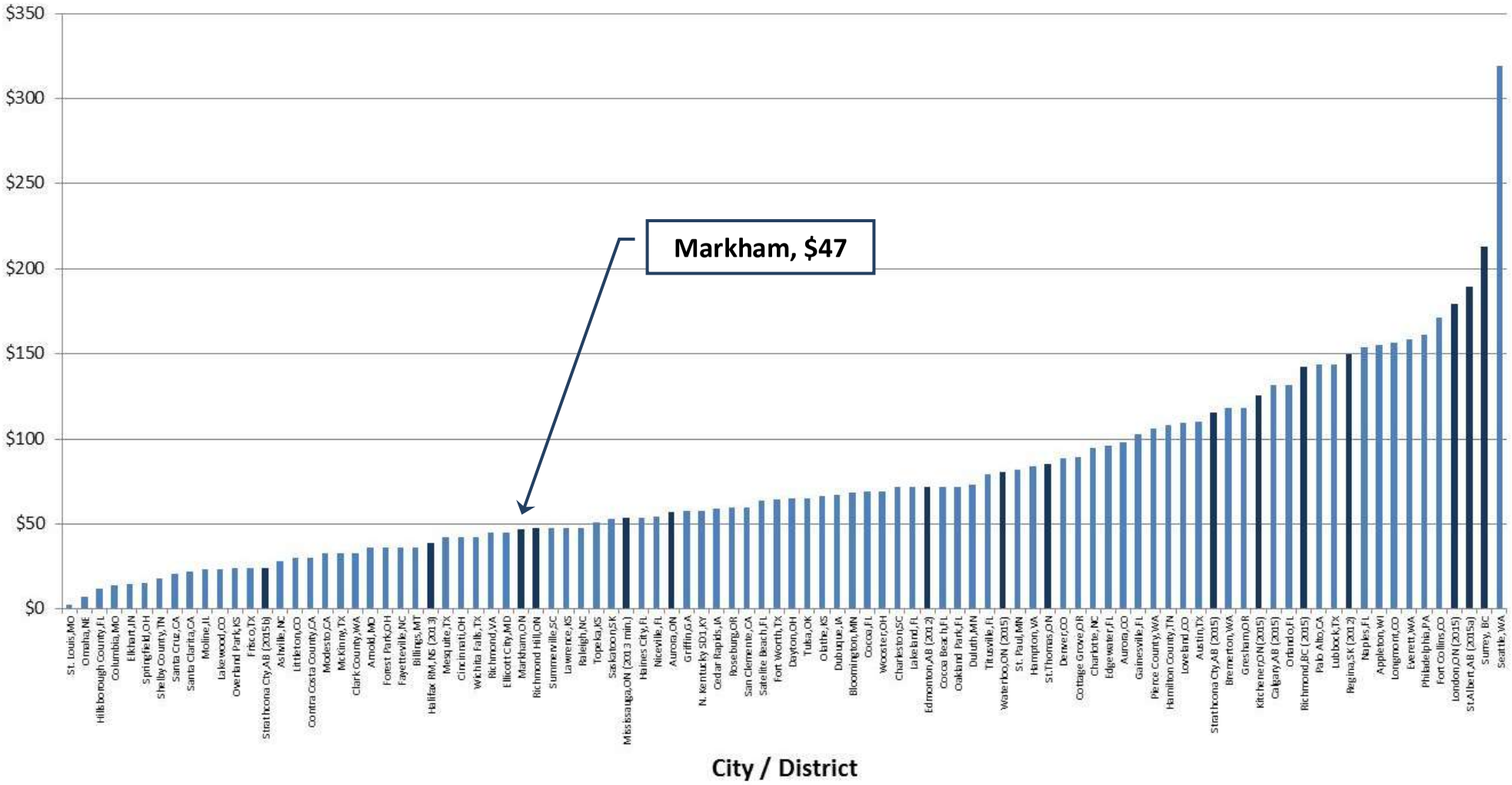
Markham Comparison : The Markham Stormwater Fee structure shares characteristics with several other funding programs noted above. It uses city-wide impervious areas as the basis of funding to set city-wide, total sector fees, and uses flat fees and CVA-based fees to allocate individual properties/lot fees within each sector (i.e., residential and non-residential, respectively). The *2014 Stormwater Utility Study*, Black & Veatch (2014) indicates **the majority (67%) of US residential fees are uniform flat charges, similar to the Markham structure, and 94% of charges are city-wide (not area-specific), also similar to the Markham structure.**

Table 2 – Basis of Property Fees and Billing System Comparison

Billing Method		Basis for Stormwater Fee (Property Level)					
Method	**%**	**Impervious Area**	**Gross Area with Runoff Factor**	**Gross Area with Intensity of Development Factor**	**Gross Area Only**	**Other**	**Number of Cities**
		79%	**14%**	**13%**	**10%**	**3%**	
Water Bill	**71%**	836	148	138	106	32	1059
Property Tax Bill	**24%**	283	50	47	36	11	358
Separate Bill	**5%**	59	10	10	7	2	75

Markham Comparison : There are many unique combinations of basis for fee and billing method for dedicated stormwater fees as demonstrated through recent surveys. The property tax billing system is used by 24% of the survey respondents identified in *2014 Stormwater Utility Study*, Black & Veatch (2014), which is the recommended approach for the Markham Stormwater Fee. Considering the distribution of basis for fee reported in that study and the number of utilities across North America noted in *The Western Kentucky University Stormwater Utility Survey 2014*, Table 2 indicates the estimated distribution of combinations of billing method and basis of fee. The most prevalent combination is impervious area measurements at the property level and billing on the water utility bill. Such impervious area measurements at the individual property level were considered unfavourable in the development of the Markham Stormwater Fee structure, based on the principle of ease of administration. **The Markham Stormwater Fee structure considers impervious area at the sector level. The use of impervious area in setting stormwater fees is the most prevalent method in the US and is a common method in Canada.** The Markham Stormwater Fee structure uses Current Value Assessment to determine fees for non-residential properties, which is equivalent to "Other" methods in Table 2.

Figure 1 – Average Annual Residential Stormwater Fee Comparison (2014/2015)



Markham Comparison : Markham's flat residential stormwater fee of $47 is can be generally compared with average annual residential stormwater fees across North America. It is noted that each stormwater program, local conditions, regulatory requirements and the services funded are unique and therefore direct comparisons may not be appropriate. Annual fees for US cities and districts were obtained from *2014 Stormwater Utility Study*, Black & Veatch (2014). Annual fees for Canadian cities are shown as dark bars above and were obtained from respective city utility web sites (accessed May 9, 2015) and from *City of Mississauga Stormwater Financing Study*, AECOM (2013). Canadian city fees range from $39/year in the Halifax Regional Municipality, Nova Scotia to $179.40/year in London, Ontario. *The Western Kentucky University Stormwater Utility Survey 2014* found that **of 1,479 stormwater utilities in the US, the average annual single family residential fee was $47.76, which is comparable to the Markham flat fee.**

Table 3 – Comparison of Non-residential Fees for Large Properties

City	Method	Property Group / Fee Details	Example Fees
Richmond Hill, ON	Flat fee	"Non-Residential and Multi-Residential" fee (effective Oct. 1, 2013, per BY-LAW NO. 25-13)	**$138.72** / year
Kitchener, ON	Impervious area based, tiered flat fee	"Non-Residential Largest" tier fee (rates effective 1 March 2014)	**$24,851** / year
London, ON	Area based rate	For areas > 0.4 hectares, $120.57 / month / hectare (per 2015 Water, Wastewater and Stormwater Rates, www.london.ca)	**$43,405** / year (e.g., 30 hectare mall)
Halifax Regional Municipality, NS	Impervious area based rate	Site Generated Flow rate of $0.149 per sq. metre of impervious area (per http://www.halifax.ca/hrwc/RatesAndFees.php)	**$44,700** / year (e.g., 30 hectare mall, 100% impervious)
Mississauga, ON	Impervious area based rate	Commercial/Mall equivalent to 519 average homes (per 2012 financing study). *Not a final rate.*	**$48,587** / year (e.g., Square One)
Markham, ON	CVA-based	$29/$100,000 of CVA (approved non-residential rate, November 2013)	**$90,480** / year (e.g., 30 hectare mall, $312M CVA)
Edmonton, AB	Area of premises, intensity factor and runoff coefficient	Stormwater utility charge = A x I x R x rate, monthly rate = $0.035274, annual rate = $0.42328 (per The City of Edmonton Bylaw 16200, Drainage Bylaw (consolidated on Jan. 1, 2015), schedule D)	**$120,637** / year (e.g., 30 hectare area of premises, A=300,000 sq.m, I=1.0, R=0.95(assume 100% impervious)) **$197,040** / year (e.g., West Edmonton Mall 490,000 sq.m)
Victoria, BC	Impervious area based rate	Impervious surfaces factor of $0.5475 per sq.metre of impervious area (per Stormwater User Fee Calculation Table, Sanitary Sewer and Stormwater Utilities Bylaw, Bylaw No. 14-071)	**$164,250** / year (e.g., 30 hectare mall, 100% impervious)

Markham Comparison : Fees resulting from Markham's approved non-residential rate of $29/$100,000 of CVA can be generally compared with fees resulting for other Canadian city non-residential rate structures. It is noted that each stormwater program, local conditions, regulatory requirements and the services funded are unique and therefore direct comparisons may not be appropriate. **The fee for a large 30 ha commercial retail property with very high impervious land cover would range between $45k and $164k in other cities with fees based on property runoff factors. This compares to $90k for a high CVA, 30 ha commercial retail property in Markham.** The comparable fees for other cities that do not consider property-specific runoff (i.e., flat fees or tiered fees) would be considerably less.