

# Environmental Pricing Reform:

## Kitchener's Stormwater Management Utility Program

Berry Vrbanovic  
Kitchener City Councillor  
FCM 1<sup>st</sup> Vice-President





# For more information:

Councillor Berry Vrbanovic  
City of Kitchener  
200 King Street West  
Kitchener, ON  
N2G 4G7

(519) 741-2243

[berryv@kitchener.ca](mailto:berryv@kitchener.ca)

Grant Murphy  
City Engineer

(519) 741-2410

[grant.murphy@kitchener.ca](mailto:grant.murphy@kitchener.ca)



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## What is Stormwater?



# Kitchener's Stormwater Management Program

## Operations & Maintenance

Maintaining existing facilities is a large part of the stormwater budget. This vital task includes street cleaning; inspection and maintenance of ponds; inspection, cleaning, and repair of catchbasins, manholes, pipes, outfalls, ditches, channels, culverts, bridges; and other activities across Kitchener.



# Kitchener's Stormwater Management Program

## Capital Improvement Projects

The City's stormwater current facilities and assets are valued at \$300M. Capital budget needs are highly variable. Each project requires planning, design, permitting, construction, and inspection.



## Planning, Monitoring & Environmental Compliance

Assessing the City's existing SWM program and the planning of future programs requires data collection, hydraulic and hydrologic analysis, and environmental monitoring and analysis.



# Exploring the Stormwater Utility Concept

- November 2004, Council directed staff to proceed with undertaking a Stormwater Management Feasibility Study (Study).
- Conducted between 2005 and 2009, with the City of Waterloo as part of the Shared Services Initiative.
- The study identified the need for a sustainable funding source for stormwater management programming along with several funding options.
- Approved increasing the program service level by \$4.1M annually and the principle of shifting stormwater programming from the tax base to a rate-based approach (January 2010).
- Approved the “tiered flat fee” stormwater rate model as the basis to charge property owners for stormwater programming (February 2010).





# Stormwater Utility Implementation

- Staff then presented a stormwater rate and utility implementation plan along with recommendations on May and June 2010 regarding:
  - Rate Structure and Methodology
  - Proposed Stormwater Rate Credit Policy
  - Stormwater Program - 10 Year Capital and Operating Forecast
- Kitchener Council approved rates on June 14, 2010 and Waterloo Council approved rates on June 21, 2010.





## Emerging Challenges

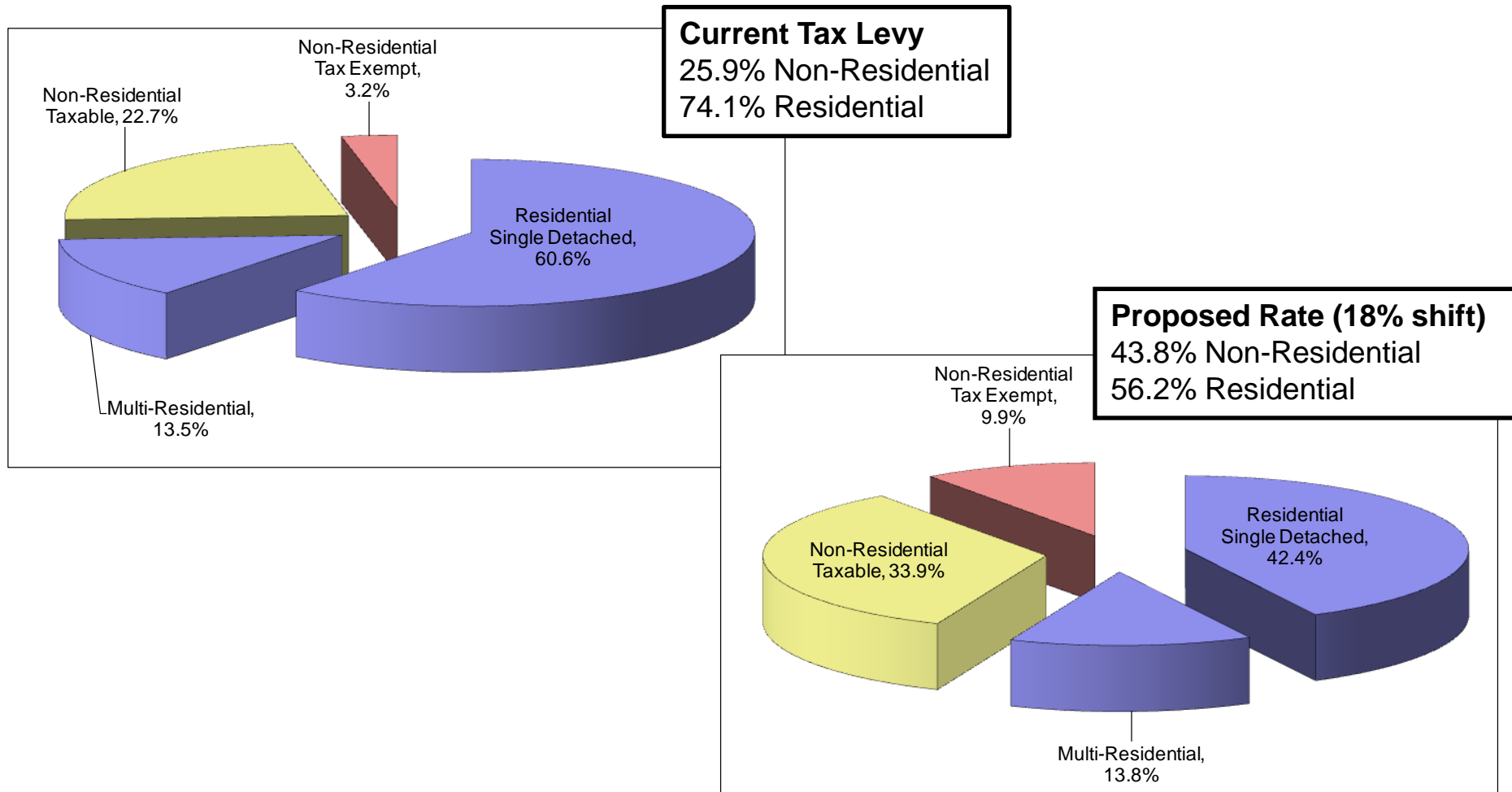
- Successive studies either make recommendations about required infrastructure improvements or establish the need for the City to put into place long-term preventive system maintenance and monitoring programs.
  - 2008 SWM Audit (DTS 09-131) identifying needs within watercourses and 90+ SWM ponds across the City.
  - Victoria Lake Remediation Class Environmental Assessment Study (DTS 09-096), and
  - Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update (DTS 08-032),
- As such these future program needs will present additional challenges to the City in its attempts to deliver a sustainable level of SWM service.
- Dedicated funding for stormwater programming is vital to the long term well-being of the community and providing effective environmental stewardship



# Why a Stormwater Utility Rate?

## Fair & Equitable Distribution of Expenditures

- Property owners are charged in relation to the amount of impervious area on their property, which directly correlates to their property's contribution of runoff volume and pollutant loading.
- A stormwater rate offers a fair and equitable method to allocate costs of the stormwater management program.
- Relatively new concept in Canada, but has been successfully implemented in hundreds of cities throughout the United States.





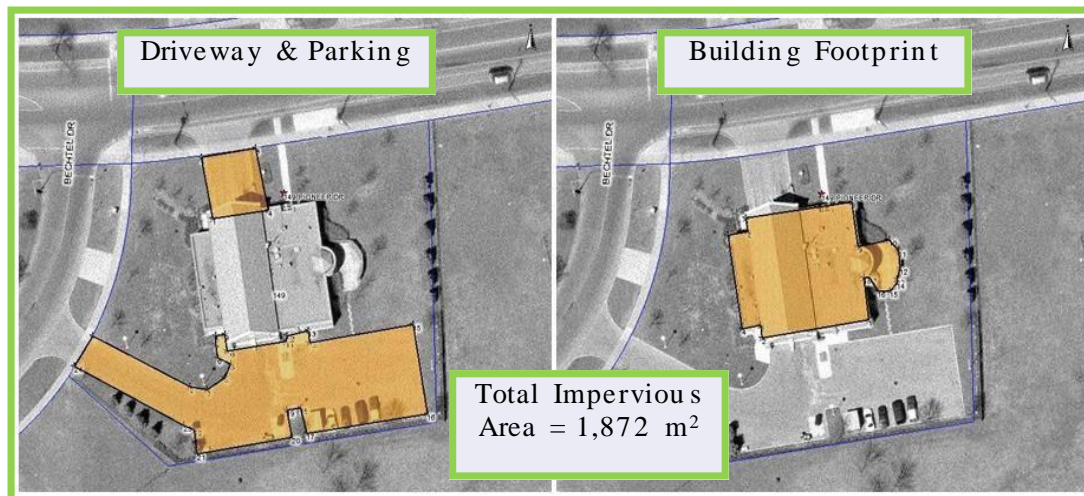
# Stormwater Rate Principles

- Address the City's regulatory obligations associated with stormwater management
- Define program service level with a dedicated funding source
- Apply rate structure in a consistent manner.
- Coupled to a stormwater rate credit policy helps drive environmental stewardship for property owners



## Calculating Impervious Area

- Stormwater rate based on measured impervious area:
- Driveways & parking areas (but not public right-of-way)
- Building footprint (rooftop area)
- Other hard surfaces (patios, sidewalks, etc.)





## Rate Calculation Characteristics

- Single Detached Homes (total = 41,810)
  - Statistical analysis (avg = 259 m<sup>2</sup> imp. area)
  - Charge based on building footprint size (correlated to impervious area) and assigned to one of three tiers: Small, Medium, Large
- Multi-Residential Properties (total = 18,260)
  - Statistical analysis of each type (impervious area per dwelling unit)
  - Charge based on type & number of units
- Non-Residential Properties (total = 4,250)
  - Sample statistics not valid as basis for charge
  - Charge based on measured impervious area



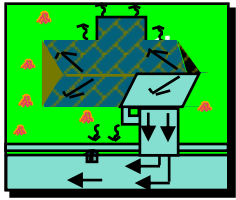


# Single Detached Homes

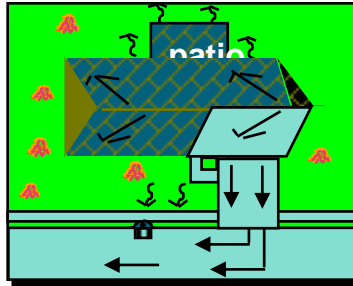
- Tiers identified through statistical analysis:
  - Small: lowest 10% impervious area (<168 m<sup>2</sup>)
  - Medium: middle 80% (between 169 – 343 m<sup>2</sup>)
  - Large: highest 10% impervious area (>344 m<sup>2</sup>)
- Use building footprint size as an indicator
  - Values available for all Kitchener properties
- Tiers (based on building footprint):
  - Small: lowest 10% (<105 m<sup>2</sup>) [<1,130 ft<sup>2</sup>]
  - Medium: middle 80% (between 106 – 236 m<sup>2</sup>)
  - Large: highest 10% (>237 m<sup>2</sup>) [<2,550 ft<sup>2</sup>]



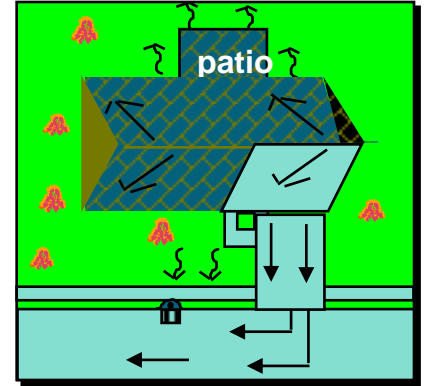
# Tiered Flat Fee Billing Unit Method



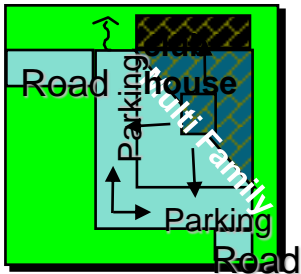
**Small Single Family Home**  
168 m<sup>2</sup> = 0.6 SFU



**Average Single Family Home**  
259 m<sup>2</sup> = 1.0 SFU



**Large Single Family Home**  
344 m<sup>2</sup> = 1.3 SFU



**Multi-Family**  
1 Dwelling Unit =  
0.2 - 1.0 SFU



$$\text{Units} = \frac{\text{Non-Residential Impervious Area}}{\text{SFU Area}}$$



# Stormwater Rate Schedule

Type Code	Description	Basis for Charge	Number of Dwelling Units	Monthly Charge per Property <sup>1</sup>	Annual Charge per Property <sup>1</sup>
1	Residential Single Detached Small	Detached homes with building footprint size of 105 m <sup>2</sup> or less	1	\$6.30	\$76
2	Residential Single Detached Medium	Detached homes with building footprint size between 106-236 m <sup>2</sup>	1	\$10.50	\$126
3	Residential Single Detached Large	Detached homes with building footprint size of 237 m <sup>2</sup> or more	1	\$13.80	\$166
4	Residential Townhouse	Per property (per Tax Roll ID number)	1	\$7.50	\$90
5	Residential Condominium	Per property (per Tax Roll ID number)	1	\$4.20	\$50
6	Multi-Residential (2-5 Units)	Per building	Duplex	\$8.40	\$101
			Triplex	\$12.60	\$151
			Four-plex	\$16.80	\$202
			Five-plex	\$21.00	\$252
7	Multi-Residential (>5 Units)	Per property (according to number of dwelling units)	varies	Charge = (# units) × (\$2.10/month) <b>See Note 2</b>	Charge = (# units) × (\$25.20/year) <b>See Note 2</b>
8	Non-Residential Smallest	26 - 1,051 m <sup>2</sup> of impervious area	n/a	\$20.10	\$241
9	Non-Residential Small	1,052 - 1,640 m <sup>2</sup> of impervious area		\$53.70	\$644
10	Non-Residential Medium-Low	1,641 - 7,676 m <sup>2</sup> of impervious area		\$140.70	\$1,688
11	Non-Residential Medium-High	7,677 - 16,324 m <sup>2</sup> of impervious area		\$410.70	\$4,928
12	Non-Residential Large	16,325 - 39,034 m <sup>2</sup> of impervious area		\$995.40	\$11,945
13	Non-Residential Largest	39,035 m <sup>2</sup> or greater of impervious area		\$2,136.90	\$25,643

Notes:

1. Monthly stormwater rate charge per property to generate \$11.56M/yr.  
Assumes 95% collection rate. All charges rounded to the nearest 30¢.
2. Example: 10-unit apt. = \$21.00/mo (\$252/yr); 25-unit apt. = \$52.50/mo (\$630/yr); 100-unit apt. = \$210.00/mo (\$2,520/yr).
3. Non-Residential tiers (Billing Codes 8-13) include both Taxable and Tax-Exempt properties.
4. Non-Residential properties with less than 26.0 sq. m. of impervious area are not charged.





# Stormwater Rate Credit Policy

Property owners may qualify for stormwater rate credits when they can demonstrate that their existing or proposed stormwater facilities or applied best management practices provide the municipality with a cost savings that the municipality otherwise would incur as part of their efforts to manage stormwater.

Credit Category	Credit Points
Stormwater Volume Control Credit	(maximum 30%)
Stormwater Quality Control Structural BMP Credit	(maximum 20%)
Integrated Non-Structural BMP Credit	(maximum 10%)
Education Credit	(maximum 5%)
<b>CREDIT SUBMITTAL (add 1, 2, 3 &amp; 4)</b>	<b>(maximum 50% of total rate charged)</b>





# Examples

# Single Detached Residential Example

Category:

Single Detached Medium

Building Footprint: 226 m<sup>2</sup>

Monthly Charge: \$10.50

Annual Charge: \$126



# Multi-Residential Example

Category:  
Multi-Residential (>5 Units)

No. of Dwelling Units: 6

Monthly Charge: \$12.60

Annual Charge: \$151



# Non-Residential Example

Category:

Non-Residential Largest

Impervious Area: 74,336 m<sup>2</sup>

Monthly Charge: \$2,136.90

Annual Charge: \$25,643





## Lessons Learned

- Take your time to develop the system properly with appropriate research and significant consultation with all stakeholders
- Be able to explain to ratepayers why this is important and how it will make the community better. In our case, a showcase project funded by the initial proceeds of the utility helped with this
- Develop a consistent and defensible method to distribute program costs to ratepayers which reflects the amount of stormwater run-off and the associated environmental impacts coming from their properties
- The rate system should be coupled with a fair system with credits for sustainable initiatives and ideally should be implemented concurrently with the rate structure
- Still a work in progress.....first bills went in the mail yesterday....stay tuned.....



# Sustainable Communities Conference and Trade Show



# Conférence et salon professionnel sur les collectivités durables



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