

# Planning for a Sustainably Funded Stormwater Program

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# Firstly... a great reference !



## **User-Fee-Funded Stormwater Programs e-book**

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### **Item Details:**

A must-read for agencies and public works departments interested in developing charge systems for stormwater programs based on fee structures. *User-Fee-Funded Stormwater Programs* will specify the drivers for stormwater user-fee formation and explore the responsibilities, costs, and entire implementation process.

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<https://www.e-wef.org/Default.aspx?TabID=251&productId=30596698>

# Stormwater Infrastructure is Chronically Underfunded. Until...



*A monument on York Boulevard marks the resting place of victims from the 1854 cholera outbreak in Hamilton. - Hamilton Spectator file photo*



Debris



Erosion

11 11 2004



Water Quality

5/6/1999 1:57pm



Flooding

# Why Consider Alternative Stormwater Financing Alternatives?

- Municipal governments have limited flexibility and autonomy in generating revenue
- Annual stormwater budgets have to compete with other vital public services. As a result...  
*The implementation of capital projects and the extent/frequency of O&M activities often become dependent on the availability of funds, rather than based on need.*
- It can be expected that competing demands for limited public funds will continue.
- Stormwater management is a service that keeps a low profile, but ***without adequate funding can lead to serious problems that will only get worse without dedicated sustainable funding***

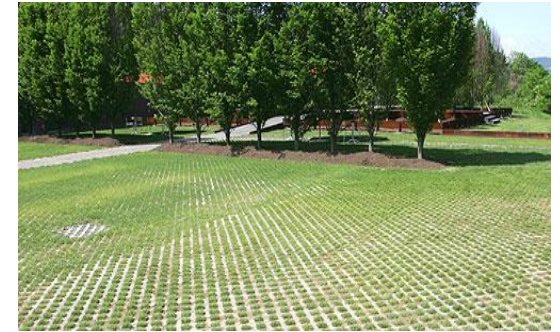
# **Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure**

*Ontario Regulation 588/17:* states that all municipal asset management plans must include information about the levels of service that the municipality proposes to provide, the activities required to meet those levels of service, and a strategy to fund activities by July 1, 2024.

# It's Only a Few Dollars per Month, How Hard Can it Be?



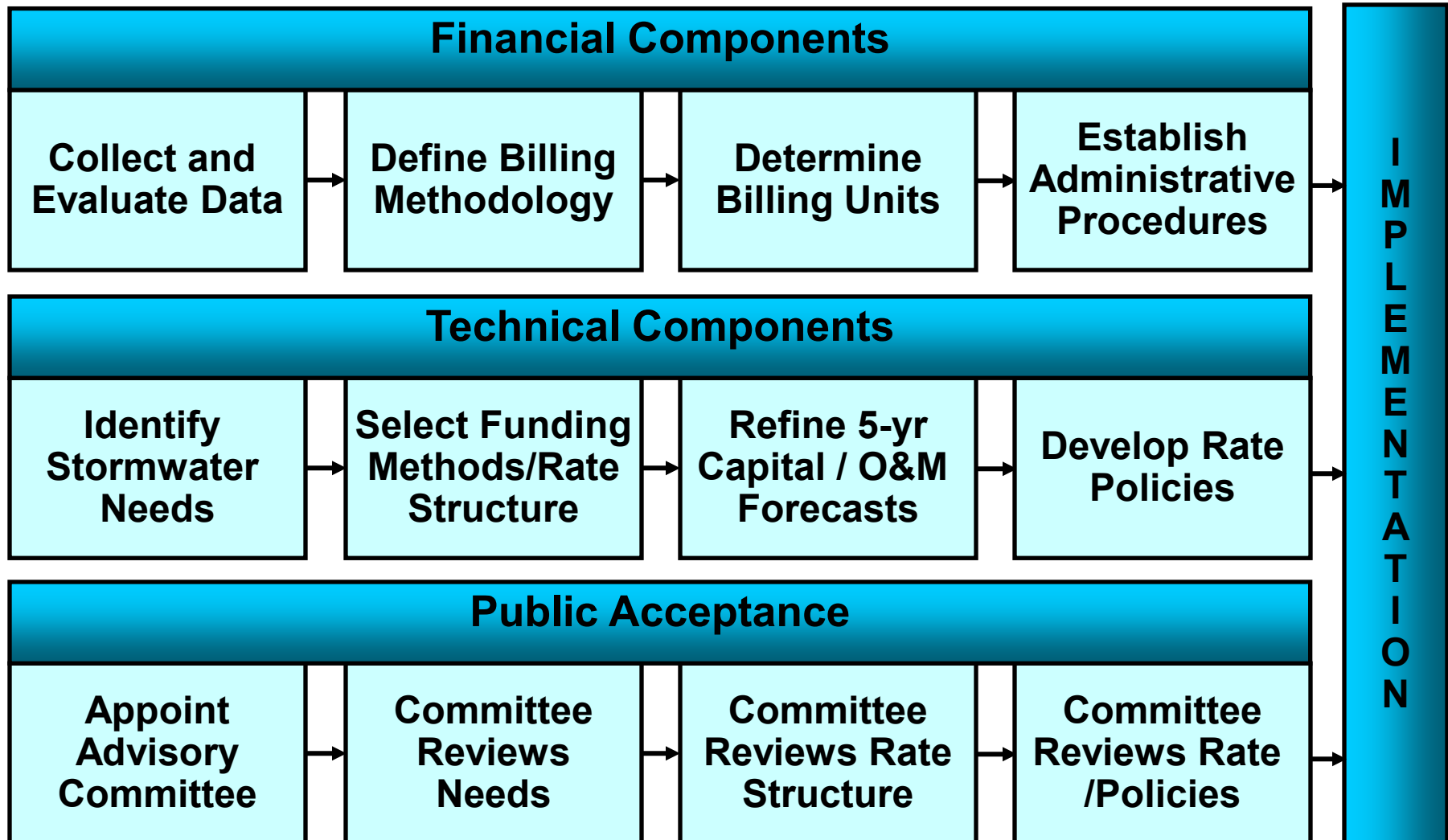
Kitchener Record, editorial cartoon (7-Apr-2006)



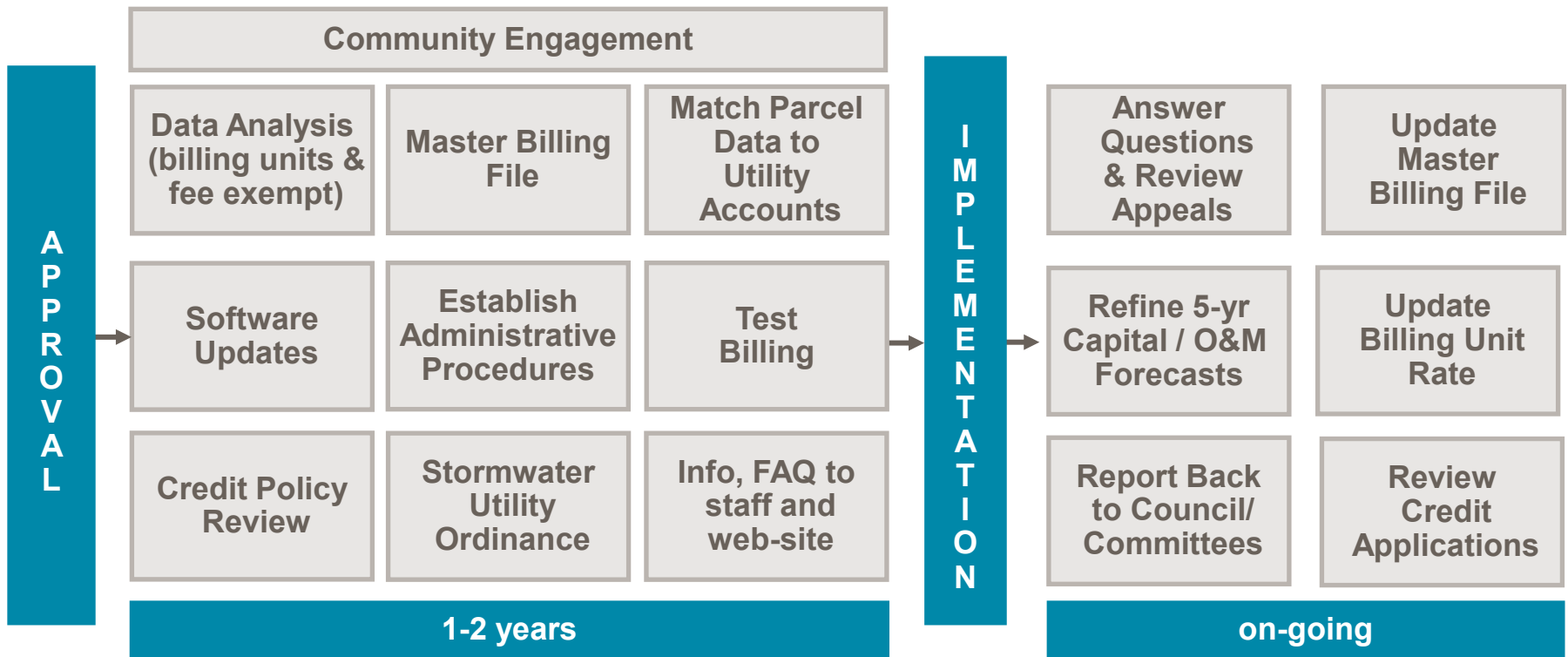
# STUDY PROCESS

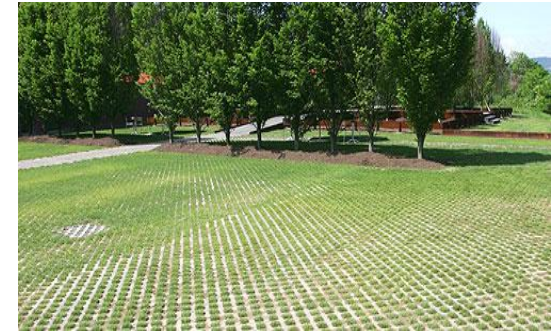


# Stormwater Financing Feasibility Study Process



# Stormwater User Fee Implementation Process





# INFORMATION REQUIREMENTS



# Sample Stormwater Program Costs

Stormwater Management Program Item	Annual Expenditure	
	Current	Required
<b>Operations and Maintenance</b>		
Stormwater Management Facilities <sup>1</sup>	\$115,000	\$266,000
Oil/Grit Separators <sup>1</sup>	\$43,000	\$263,000
Storm Sewer System Operation <sup>1</sup>	\$66,000	\$631,000
Additional Drainage Items <sup>2</sup>	\$525,000	\$0
<b>Subtotal</b>	<b>\$749,000</b>	<b>\$1,160,000</b>
<b>Capital Improvements</b>		
Storm Sewer System Upgrades <sup>1</sup>	\$1,004,000	\$2,544,000
Additional Drainage Items <sup>2</sup>	\$543,000	\$0
<b>Subtotal</b>	<b>\$1,547,000</b>	<b>\$2,544,000</b>
<b>Asset Renewal<sup>2</sup></b>		
<b>Subtotal</b>	<b>\$0</b>	<b>\$2,737,000</b>
<b>TOTAL</b>	<b>\$2,296,000</b>	<b>\$6,441,000</b>

1. Typically from a SWM Master Plan
2. Typically from an Asset Management Plan or Benchmarking Information

# Approach: The National Water and Wastewater Benchmarking Initiative

- Through the NWWBI, AECOM and participating municipalities have identified a goal model for Utility Services
- Sets the framework for identifying LoS for Utility management → activities and KPIs



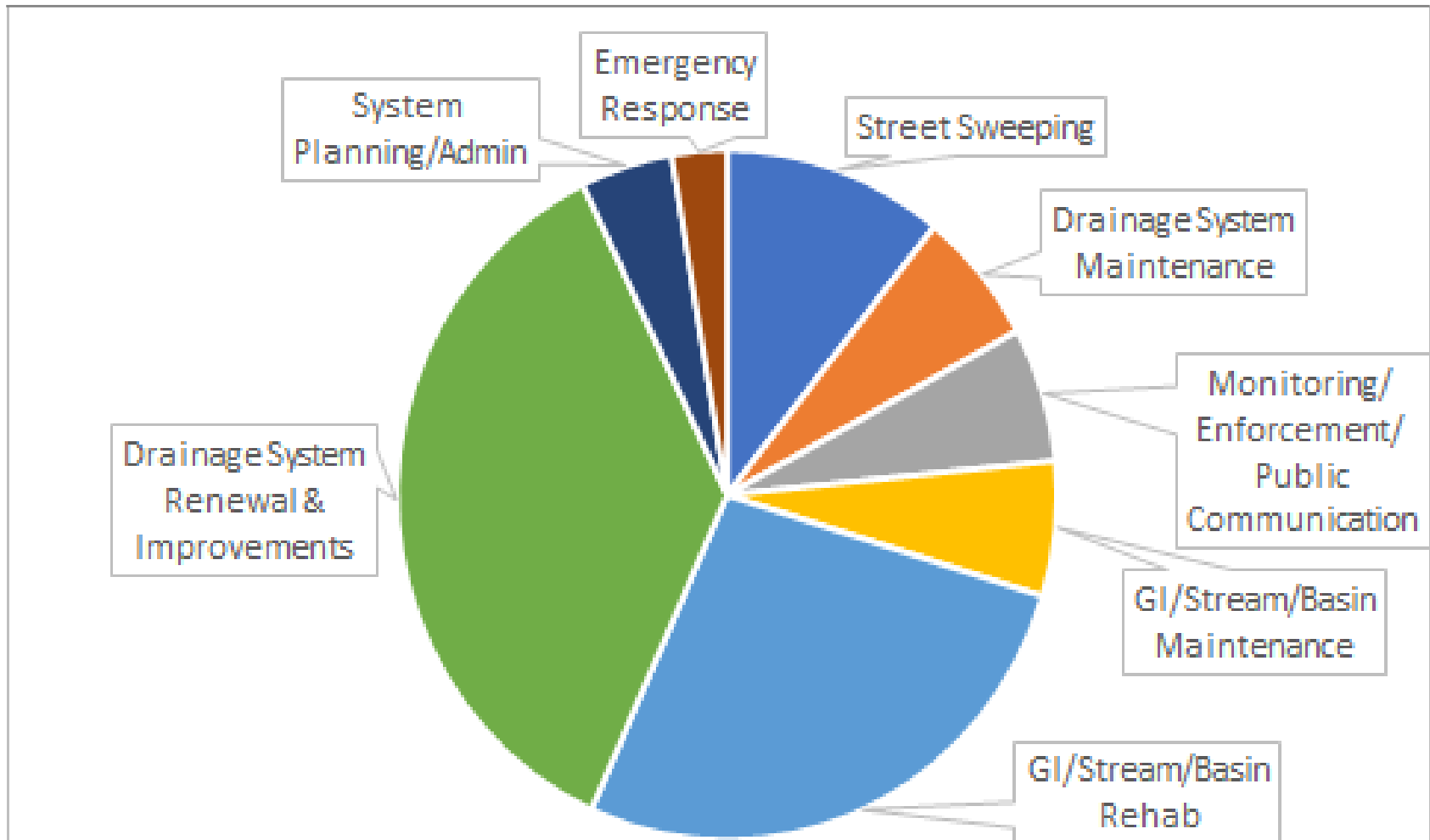
# Asset Management and Green Infrastructure

Can follow the same overall management approach as traditional stormwater infrastructure **BUT**:

- Different **maintenance/renewal** pattern.
- “**Replacement value**” for future capital expenditures does not always apply. Think rehab.
- Blurred line between **operating expenses and capital expenses**. When does “rehab” move from operating to capital?
- Infrastructure “**value**” > ability to convey/ store stormwater. Consider other values (or risks) - habitat, reducing heat-island effect, capturing CO<sub>2</sub>, beautification/livability, water quality etc. for CBA or risk-based prioritization.

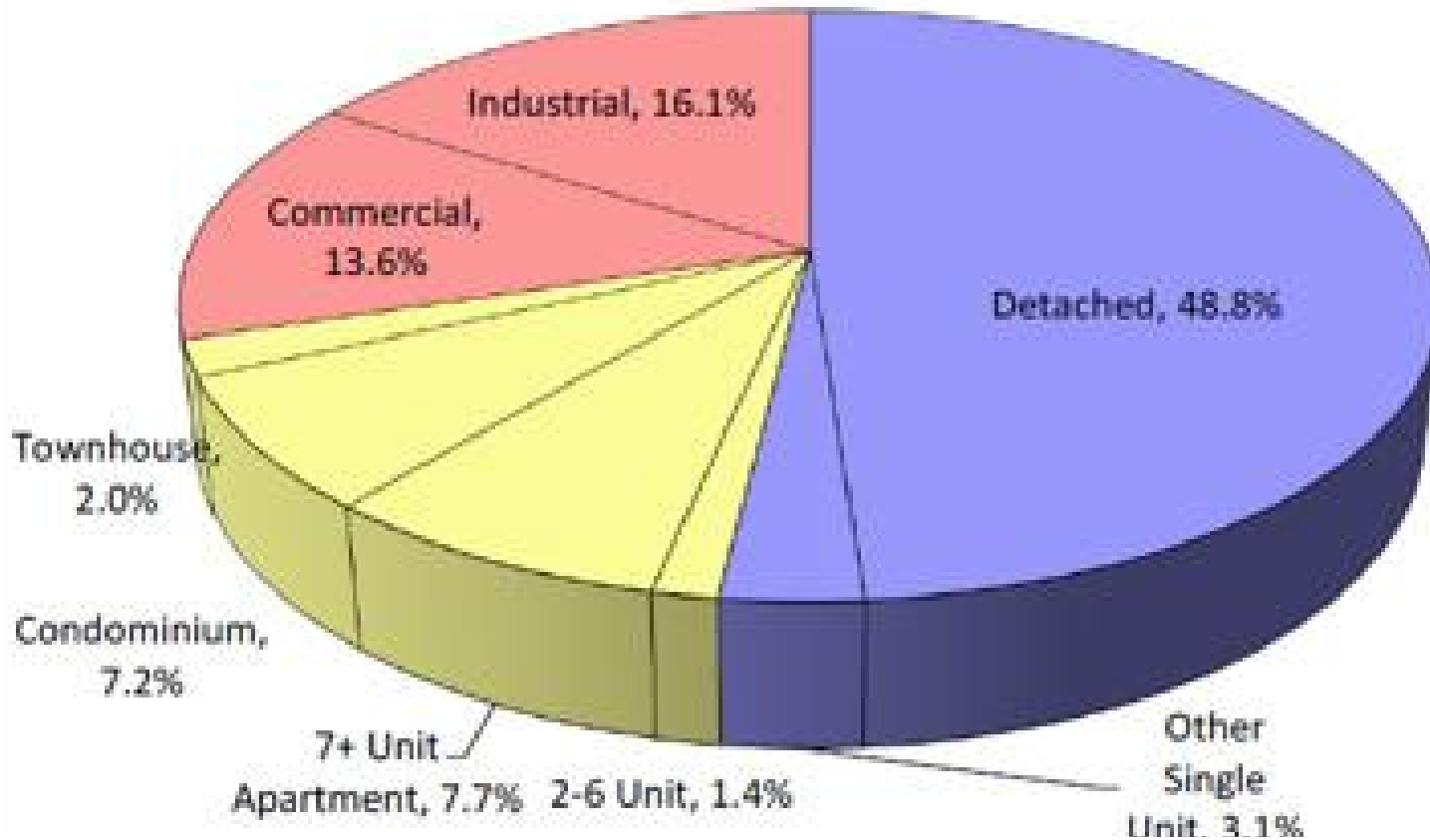


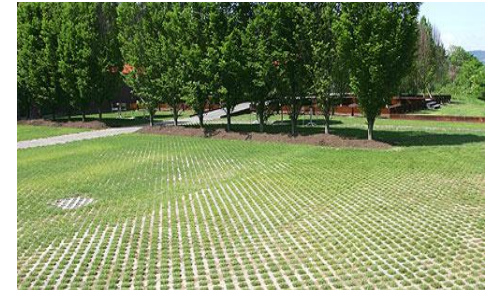
# Revenue Requirements



# Revenue Sources

## *Tax Levy Distribution - Sample*





# FUNDING OPTIONS

Taxation  
Development Charges  
User Fees

# Property Tax Funding

Mandatory levies that are not related to any specific benefit or government service (i.e., general services for the public good)

	Pros	Cons
	<ul style="list-style-type: none"> <li>• Already accepted as the primary existing source of revenue for municipalities</li> <li>• Can be used to fund all stormwater management program activities</li> <li>• The billing system is already established</li> </ul>	<ul style="list-style-type: none"> <li>• Property taxes are based on a property's assessed value, not runoff contribution, so the fairness and equity is low</li> <li>• Not a dedicated* or stable funding source</li> <li>• Annual competition for general tax funds to support other community services</li> <li>• No incentive to adopt source controls to reduce runoff</li> <li>• Tax-exempt properties don't contribute to SWM program</li> </ul>

*\*Note: A dedicated tax levy for specific SWM services could be adopted*

## Development Charges – New Development

- Ontario Development Charges Act of 1997 authorizes municipalities to pass by-laws to recover costs incurred related to new and re-development projects
- Only used to fund eligible growth-related capital costs, and only for the services for which they were collected
- Revenue derived from DC can be applied to projects throughout the municipality
- Often based on the number of residential dwelling units or the building floor area for non-residential developments

## Stormwater User Fees

– Charges derived on a fair and equitable basis, for example...

- Water – Volume used
- Wastewater – Volume generated
- Solid Waste – Volume/Weight generated
- Stormwater – Runoff contribution

### The Big Equation

$$Charge = \frac{\text{“cost of program” (NUMERATOR)}}{\text{“billing units” (DENOMINATOR)}}$$

## Approach to Determine Billing Units

- Property types; 14 stormwater “customer” classifications
- Database developed for properties from MPAC, City data, and other information
- Impervious area measured using aerial photos and other data sources for residential properties and statistics developed to determine the average impervious area per dwelling unit, etc.
- Impervious area estimated non-residential properties

Property Type	Classification
<b>Single Unit Residential</b>	Detached
	Semi-Detached
<b>Multi-Unit Residential</b>	Duplex
	Triplex
	4-Plex
	5-Plex
	6-Plex
	7+ Unit Apartments
	Condominium
	Townhouse
<b>Non-Residential</b>	Mobile Home Park
	Industrial/Comm/Institutional
	Miscellaneous/Mixed Use
	Undeveloped

## Impervious Area Based Stormwater Rate

- Charge based on impervious area measurements:
  - Rooftops
  - Driveways
  - Parking areas
  - Patios
  - Sidewalks
- Fair and equitable basis for user fee
  - Based on property's contribution of runoff volume and pollutant loading
  - Not assessed value, # of water meters, frontage, zoning type, area, etc...



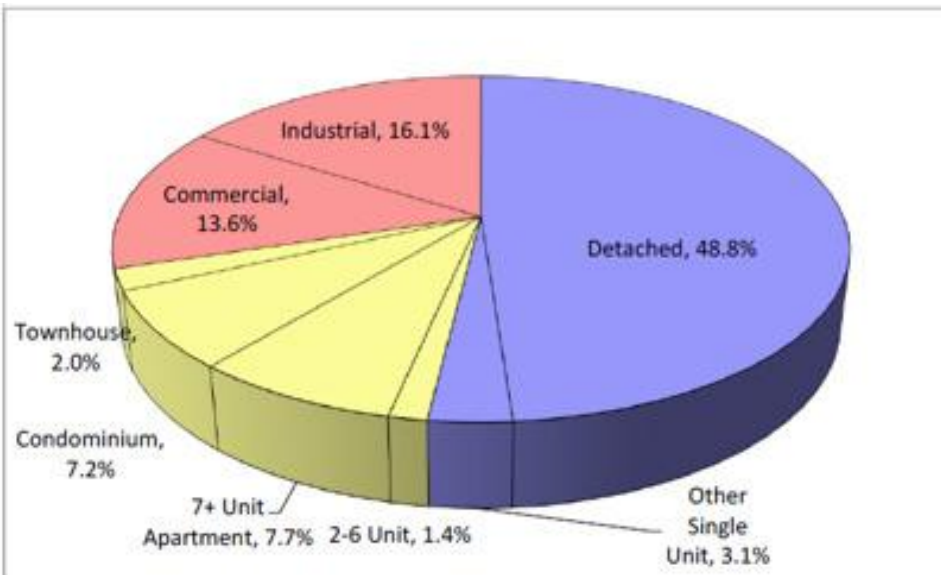
## Stormwater User Fees in Ontario (2018)

Municipality	Rate Type	Start Date	Annual Rate for Typical Single Family Residence	Monthly Rate for Typical Single Family Residence
London	Tiered Flat Fee	1996	\$195.60	\$16.30
Aurora	Tiered Flat Fee	1998	\$65.28	\$5.44
St. Thomas	Tiered Flat Fee	2000	\$121.32	\$10.11
Waterloo	Tiered SFU	2011	\$143.04	\$11.92
Kitchener	Tiered SFU	2011	\$164.76	\$13.73
Town of Richmond Hill	Tiered Flat Fee	2013	\$67.84	\$5.65
Markham	Property Tax Levy	2015	\$47.00	\$3.92
Mississauga	Tiered SFU	2016	\$106.10	\$8.84
Ottawa	Tiered Flat Fee	2016	\$128.31	\$10.69
Guelph	ERU	2017	\$74.40	\$6.20

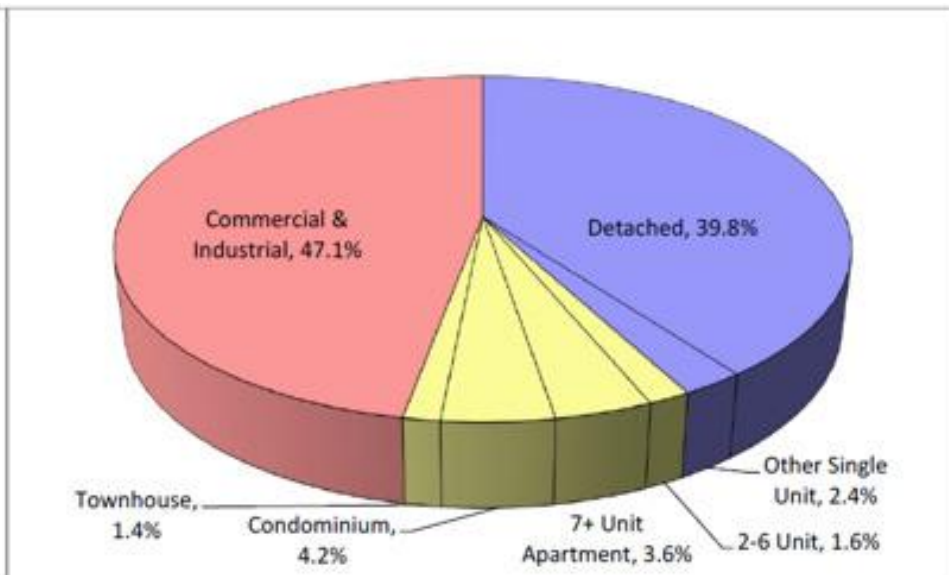
Average charges in Ontario for single-family detached homes, excluding partially funded programs, is \$9 per month.

# Contribution vs. Contribution

*Tax Levy Distribution - Sample*



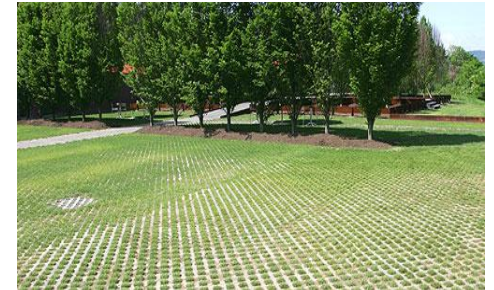
*Impervious Area - Sample*



## Stormwater User Fee Funding - Rate based on impervious area

Pros	Cons
<ul style="list-style-type: none"><li>• Dedicated and stable funding source for all SWM program activities (i.e., sustainable)</li><li>• Fair and equitable fee based on runoff contribution (all private and publicly-owned properties assessed in the same manner)</li><li>• With a credit program, provides an incentive for property owners to reduce stormwater runoff and pollutant discharge</li><li>• Mechanism to ensure privately owned SWM facilities are maintained</li></ul>	<ul style="list-style-type: none"><li>• Additional implementation costs (rate study, database management, billing and customer service*)</li><li>• Possibility that a “new fee” may not be well received by the public</li></ul>

\*Note: Potential to administer stormwater rate through other existing billing systems (e.g., hydro, water/ sewer, etc.).



# EVALUATION OF ALTERNATIVES

# Screening of Funding Options

Funding Method	City Wide Applicability	Used for Capital Costs	Used for O&M Costs	Used for Eng'rg/ Support Costs	Fair & Equitable Allocation	Dedicated Funding Source	Effort To Administrate	Environmental Benefits
Property Tax	Yes	Yes	Yes	Yes	No	No	Low	Low
Development Charges	No	New Capital	No	Partly	Partly	Yes	Medium	Medium
Stormwater Rate	Yes	Yes	Yes	Yes	Yes	Yes	High	High

# Questions?



# Thank You!

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