

NEW SOLUTIONS FOR SUSTAINABLE STORMWATER MANAGEMENT IN CANADA



Presented by: Sara Jane O'Neill
Senior Research Associate

A photograph of a storm drain with a rainbow-like oil slick on the water surface. The oil slick is composed of multiple thin layers of oil, creating a spectrum of colors from purple and blue to yellow and red. The drain is a metal grate with several vertical slots. The water is dark and murky, and there are some small pieces of debris floating in it. The background is a light, overcast sky.

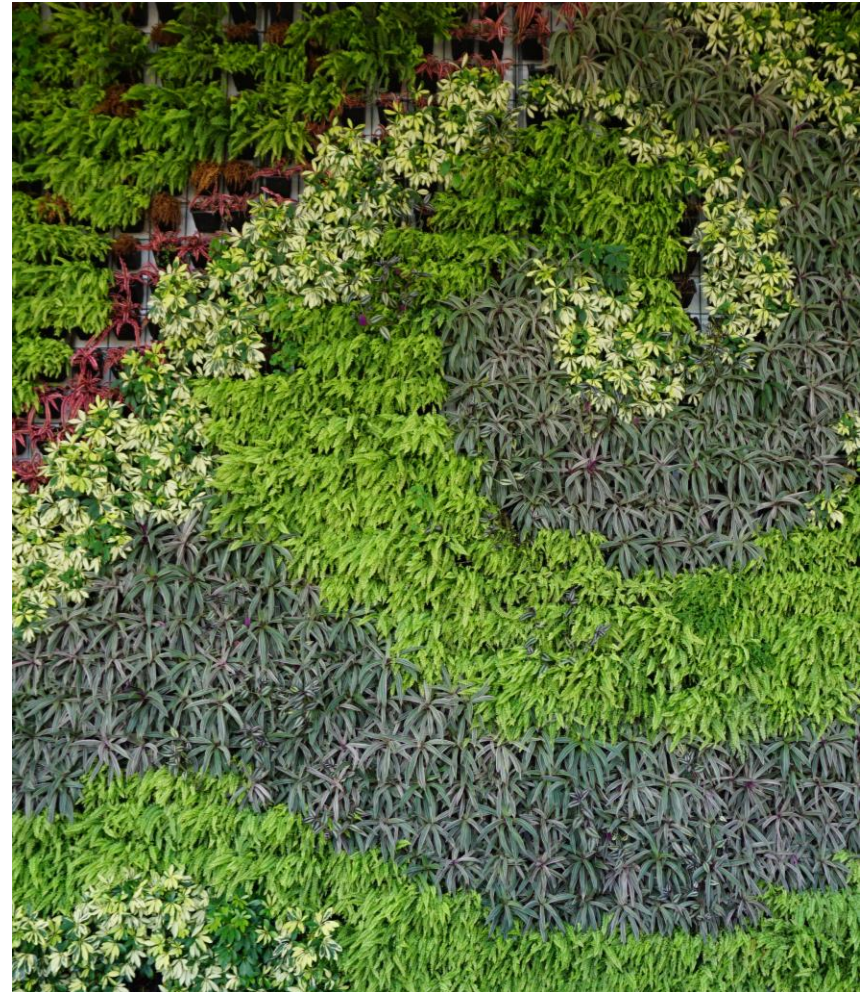
Report available at:

institute.smartprosperity.ca/stormwater



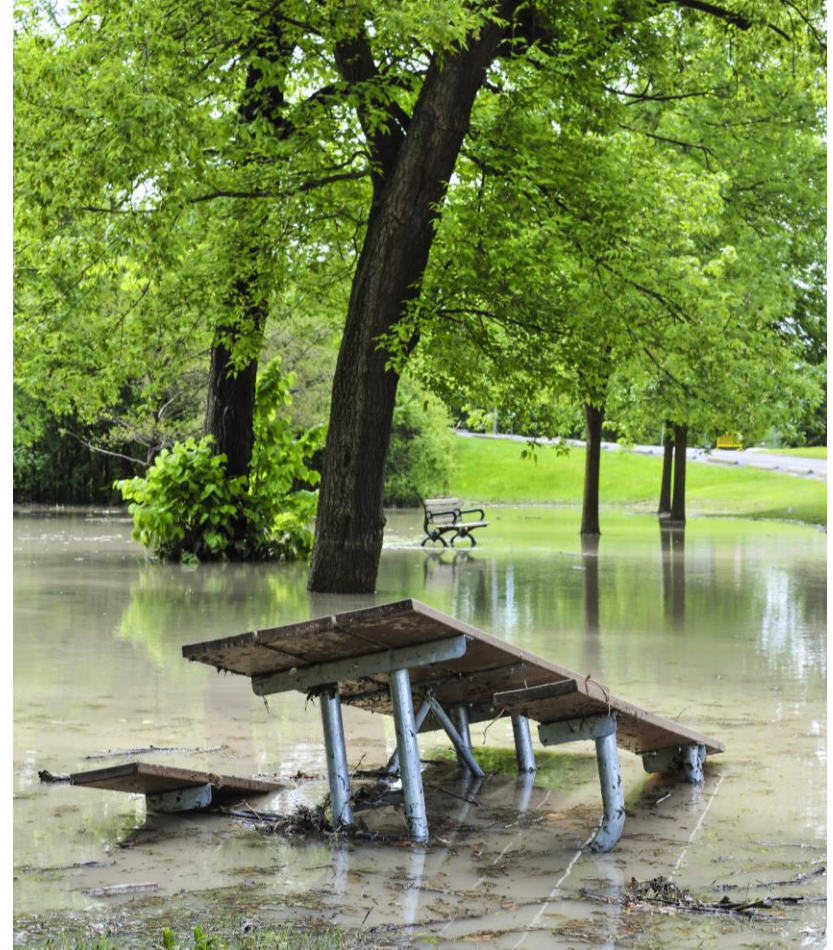
New Solutions

- Stormwater User Fees
 - For a dedicated stormwater funding stream that is sustainable, transparent, and fair
- Green Infrastructure
 - For a cost-effective stormwater system that is less polluting and more resilient



Challenges with current funding mechanisms

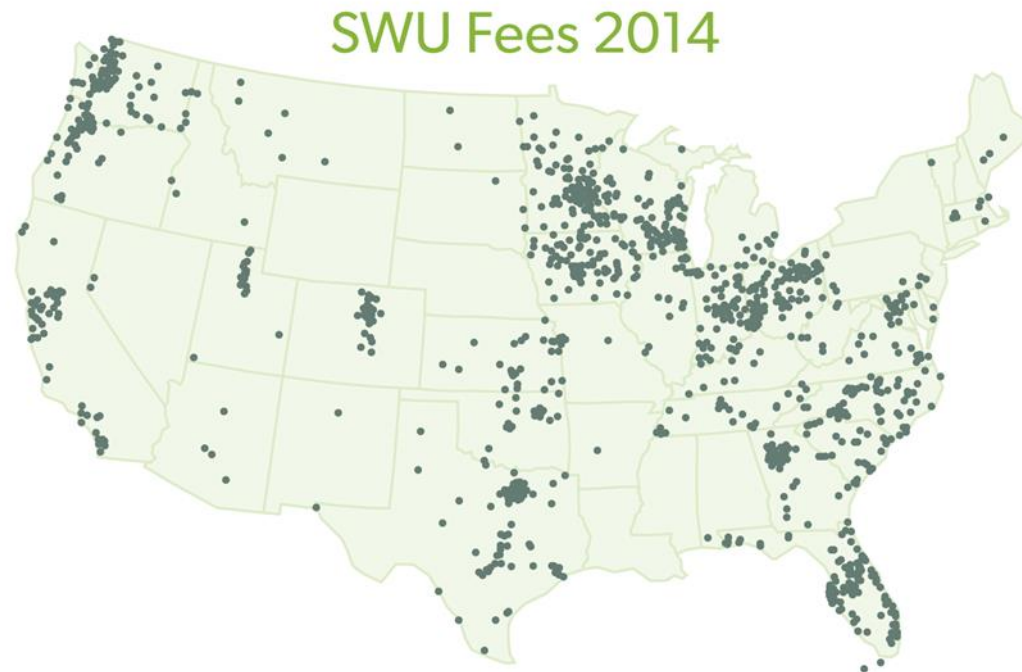
- Stormwater services mostly covered through property taxes or water/wastewater utilities
 - Neither reflects actual stormwater services [used](#)
 - Buried in general revenue – compete for budget space
 - No incentive to manage stormwater on private properties



Stormwater User Fees

- Each property is charged a fee based on the estimated amount of stormwater generated
- Benefits:
 - Dedicated Revenue Stream
 - Fair Assignment of Costs
 - Economic Incentive
 - Greater Awareness & Transparency

SWU Fees in the U.S.

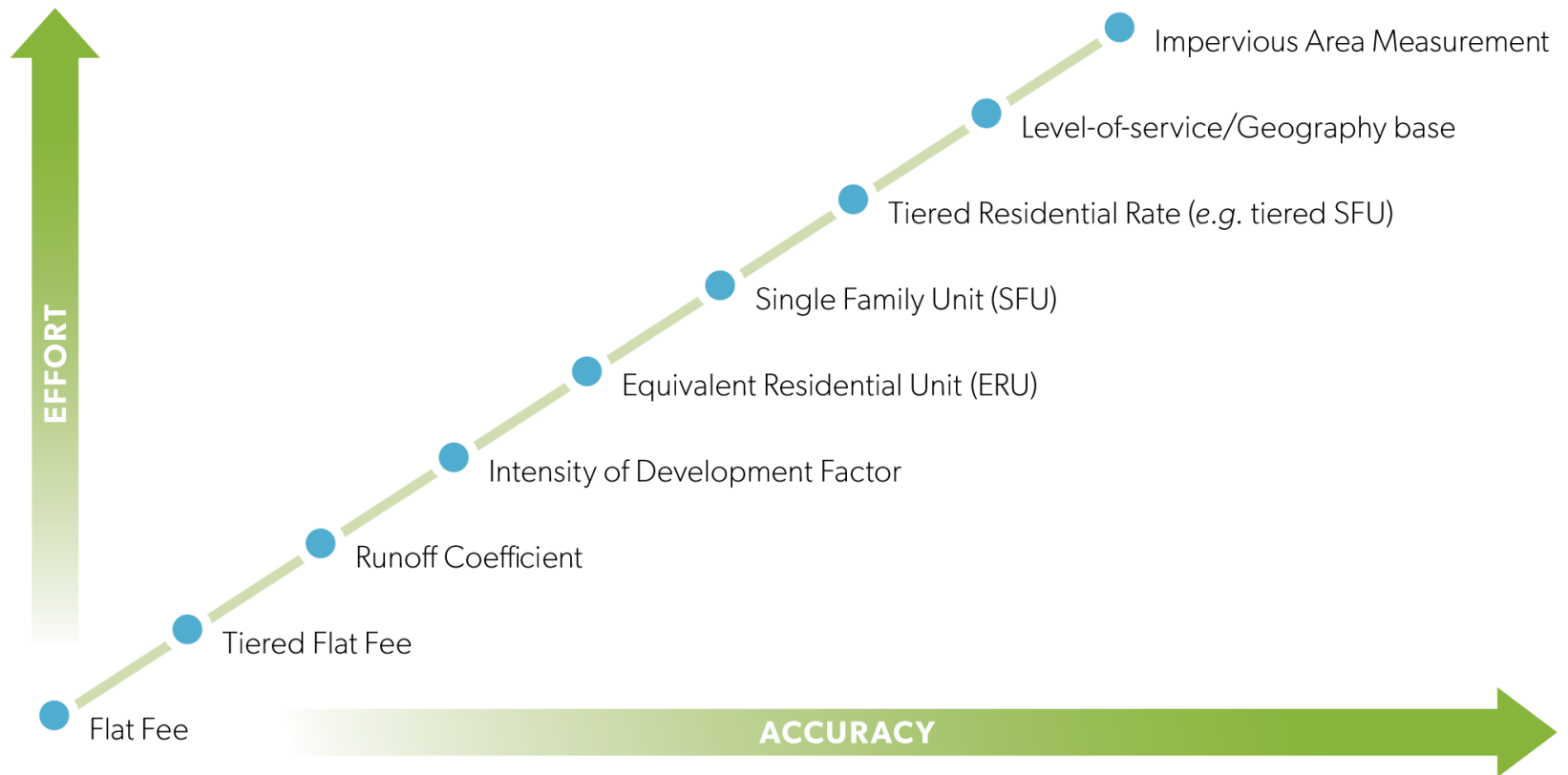


1500 stormwater user fees (SWUs) located in 40 states and the District of Columbia

SWU Fees in Canada

Community	Prov.	SWU Fee Type
Halifax	NS	Equivalent Residential Unit (ERU)
London	ON	Fee based on Property Size
Aurora	ON	Flat Rate (per unit)
St. Thomas	ON	Flat Rate
Kitchener	ON	Single Family Residential Unit (SFRU)
Mississauga	ON	Single Family Residential Unit (SFRU)
Waterloo	ON	Tiered Flat Rate
Richmond Hill	ON	Tiered Flat Rate
Regina	SK	Flat Rate (based on property size)
Saskatoon	SK	Equivalent Residential Unit (ERU)
Calgary	AB	Flat Rate
Edmonton	AB	Intensity Factor & Runoff Coefficient
Saint Albert	AB	Flat Rate
Strathcona County	AB	Flat Rate
Langley	BC	Stormwater Levy
Pitt Meadows	BC	Flat Rate
Richmond	BC	Flat Rate
Surrey	BC	Flat Rate
Victoria	BC	Impervious Area
West Vancouver	BC	Tiered Flat Rate
White Rock	BC	Runoff Factor & Annual Flat Rate

SWU Fee Design



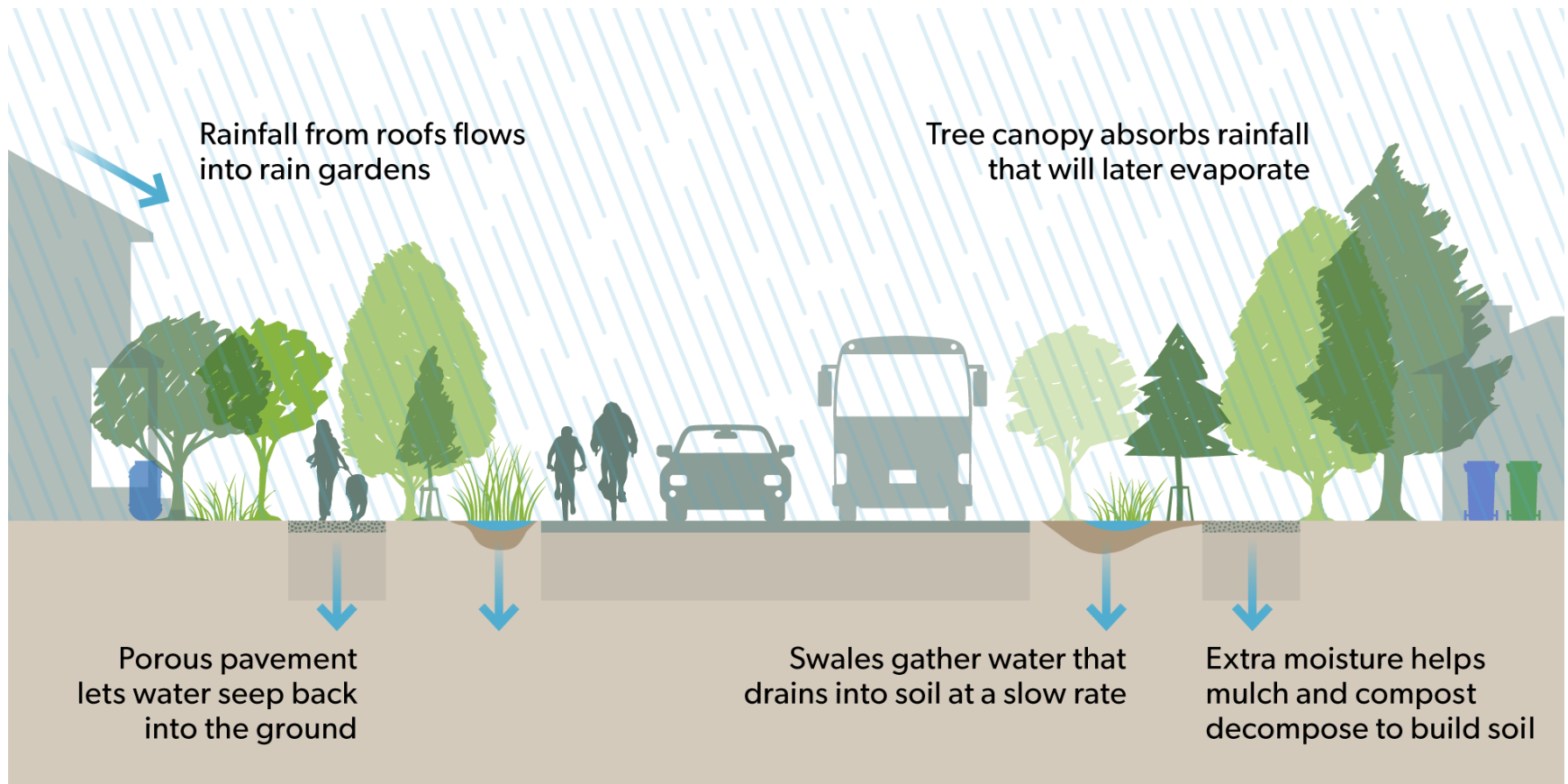
SWU Fee Challenges

- *Public Perception:*
 - User fees can mistakenly be perceived as a new charge or tax
 - Based on early adopter experiences, early and comprehensive public consultation and education will be key to addressing this challenge.
- *User fee design:*
 - How a stormwater user fee is calculated determines the level of fairness, accuracy, and cost-effectiveness of the fee – but this must be balanced with resources and capacity
- *Cost shifts between stakeholders:*
 - In some cases, the [cost shift](#) can result in much higher bills to non-residential property owners, which can cause concerns and resistance to the user fee.
 - Many municipalities have addressed this by phasing in the user fee over a period of time to allow property owners to budget for the costs.
 - As well, many municipalities also provide a strong credit program

SWU Fee Common Considerations

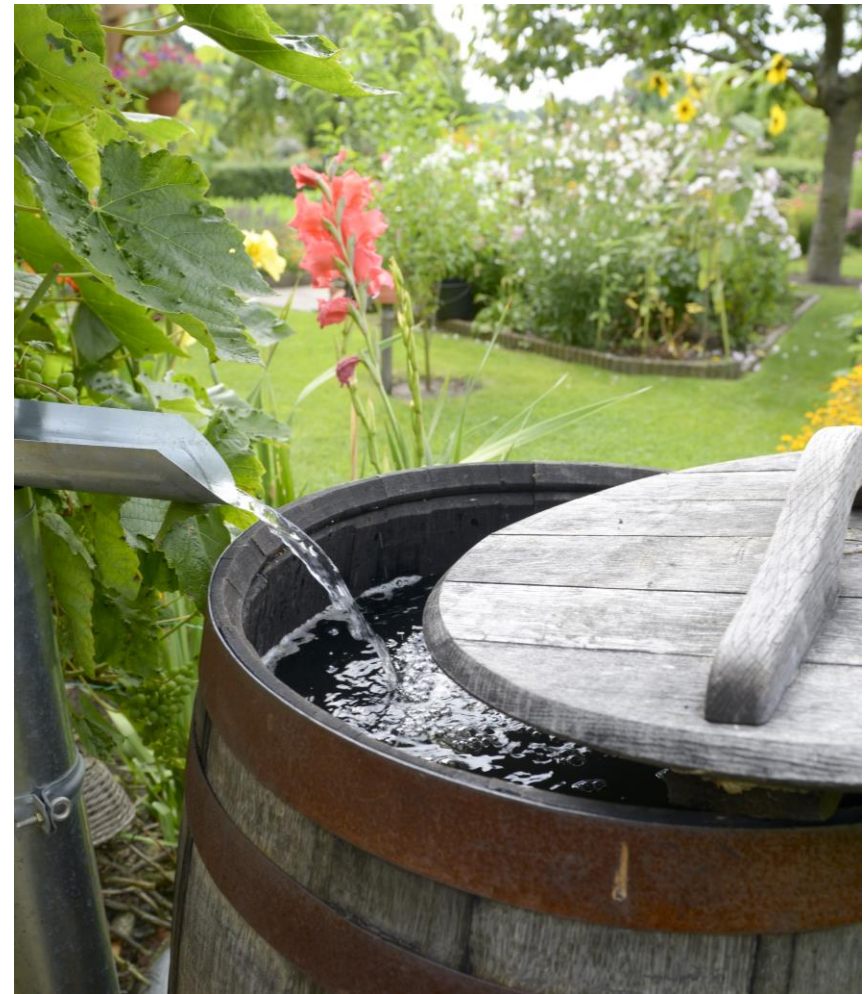
- Appeals Process
- Assistance Program
- Exemptions
- Phased-In Transition
- Credit/Discount Program

Green Infrastructure for Stormwater



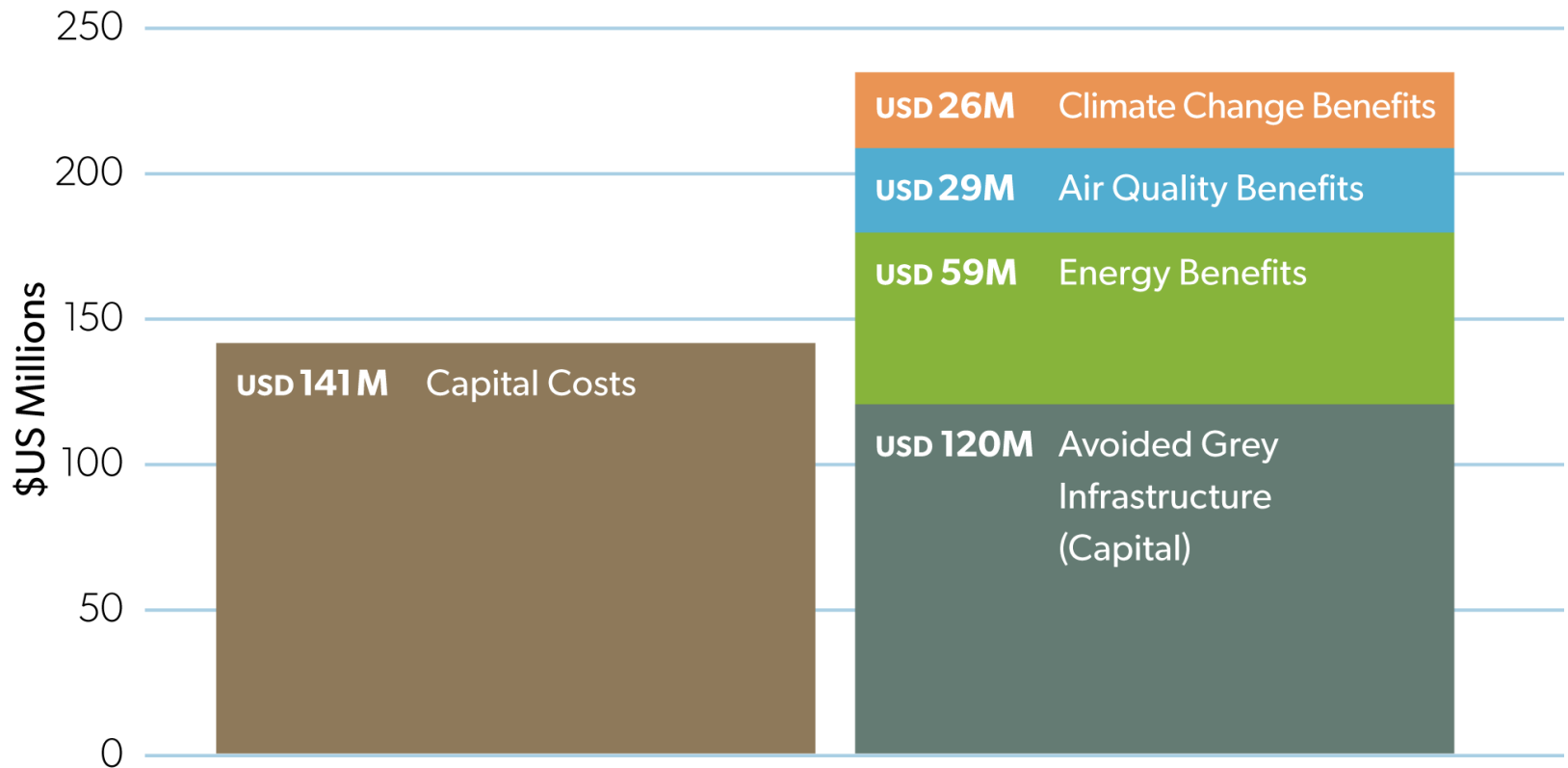
Benefits of Green Infrastructure

- More cost-effective way of managing stormwater
- Reduced infrastructure costs for new and existing developments
- Reduced economic losses from major flooding events
- Additional social and environmental benefits



The Economic Benefits of Green Infrastructure

A Case Study of Lancaster, PA



Incentives for Green Infrastructure

- Credit / Fee Discount Program
- Rebates
- Stormwater Credit Trading
- Public-Private Partnerships

Credit / Fee Discount Program

- A credit or discount applied to a stormwater user fee to reward property owners who implement green infrastructure best management practices

City	Credit / Fee Discount Program
Portland, Oregon	Clean River Rewards Program: 100% if manage all stormwater on-site. Both residential and non-residential properties are eligible.
Kitchener, Ontario	Maximum 45% discount for both residential and non-residential properties.
Victoria, BC	Rainwater Management Credit Program: <ul style="list-style-type: none">• low density residential owners up to a 10% discount• multi-family, civic/ institutional, or commercial/ industrial owners up to 40% discount (or 50% if including an additional educational program)

Rebates

- One-time lump sum payment
- Targets specific BMPs or areas within the community

The screenshot displays the RainWise Rebates website interface. At the top, a dark blue banner features the text "700 Million Gallons" on the left and the "RainWise REBATES" logo on the right. Below the banner is a navigation menu with links for Home, About, Methods, GSI Around You, Take Action, RainWise, and Search. The main heading reads "Check My Eligibility for a RainWise rebate". A search bar contains the address "4220 E LYNN ST" and a "Check Address" button. The map below shows a residential area with a blue pin at the specified address. A blue information box on the left contains a "CONGRATULATIONS!" message and a list of options for next steps. A white tooltip on the right identifies the location as "Rainwise Eligible: Rain Garden & Cistern Eligible for Rebates" and provides the address "4220 E LYNN ST". The map is powered by Esri, as indicated by the logo in the bottom right corner.

700 Million Gallons RainWise REBATES

Home About Methods GSI Around You Take Action RainWise Search

Check My Eligibility for a RainWise rebate

4220 E LYNN ST

CONGRATULATIONS!
You are eligible for a RainWise Rebate!
What would you like to do next?

- I'm ready to consult with a contractor to install a rain garden or cistern
- I need to read over the RainWise paperwork
- I want to learn more about RainWise at a community event
- I want to visit a Web page to learn the basics about rain gardens and cisterns
- I want to speak with someone who can tell me more about Rainwise. (206-633-0224)

Address Location
Rainwise Eligible: Rain Garden & Cistern Eligible for Rebates
Address: 4220 E LYNN ST

Edgewater Park
Madison Street Dock
Madison
City of Seattle, County of King, Bureau of Land Management, Esri, HERE, DeLorm...
POWERED BY esri

Philadelphia, PA – SMIP & GARP

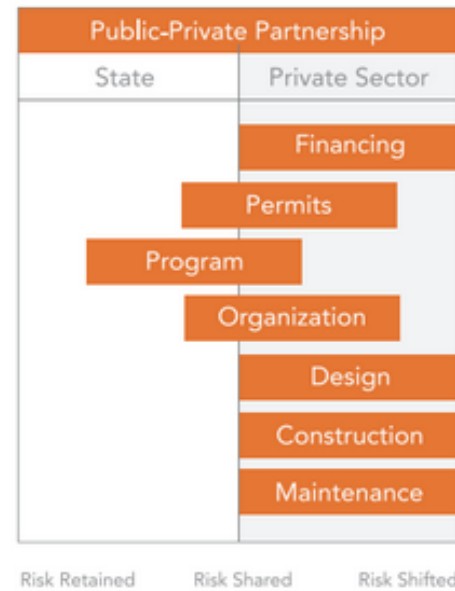
- Stormwater Management Incentive Program (SMIP)
- Greened Acre Retrofit Program (GARP)
 - Rebates provided on up-front capital costs of green infrastructure projects
 - Long-term operations & maintenance agreement
- Created Green Infrastructure Industry
- City now paying ~\$100,000 per green acre as opposed to \$250-\$300,000 per acre for public projects

Stormwater Credit Trading

- Enables property owners subject to an on-site retention requirement to meet a portion of their requirements by buying stormwater “credits” from other property owners
 - Provides flexibility
 - Two “tanks” are better than one
 - Dependent on development?
- Washington, D.C.
 - Stormwater Retention Credit (SRC) Trading
 - SRC Purchase Agreement Program
 - District Stormwater LLC: US\$1.7M investment

Public-Private Partnership (P3)

- Partnership between public and private agency
- Leverages private sector best practices & efficiencies
- Accountability & Innovation



Clean Water Partnership

- First P3 model to address urban stormwater at this scale
- Agreement signed March 2015
 - 30-year agreement with private agency ensuring regulatory urban stormwater compliance for the design, retrofit, and maintenance of green infrastructure on up to 4,000 acres of impervious area
 - Expect ~40% savings in overall costs
 - 30-40% of project must utilize local, minority, or women-owned businesses



Implications for Local Governments

- User fees can put stormwater funding on a more financially sustainable footing
- A combination of user fees with green infrastructure incentive programs can provide an integrated approach for better urban stormwater management
- Approaches should be community specific
- The Private Sector can be an important partner

Additional Lessons Learned: Community Workshops

- Need for more local/regional pilot projects and economic analyses
- Great things are already happening!

Municipal Roundtable

- Interested in digging in to your barriers to implementing stormwater user fees or incentives for green infrastructure?
- Working to develop Municipal Roundtable type sessions

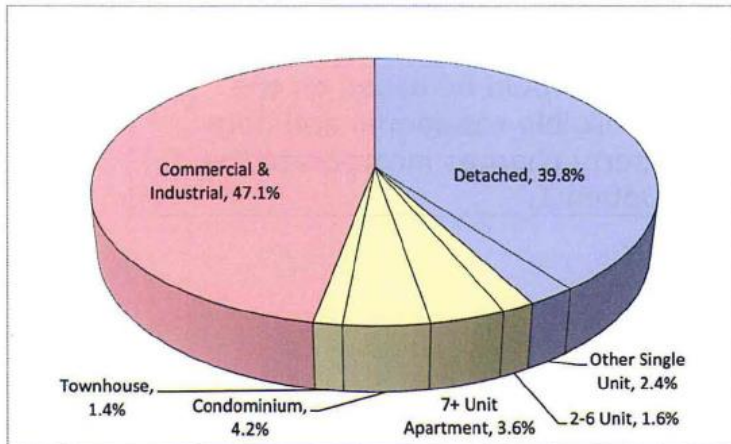
A person wearing a green tank top and blue jeans is walking through a flooded street. They are holding a large, dark, plaid umbrella over their head. The water is murky and turbulent, splashing around the person's legs. The background shows a wet, dark pavement with some cracks.

Thank You!

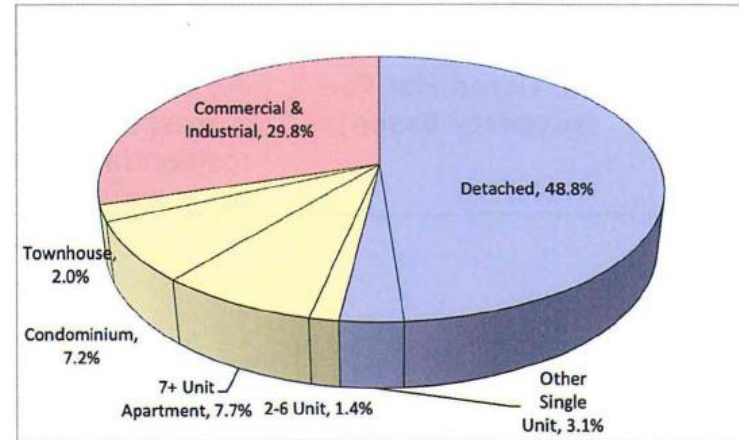
Sara Jane O'Neill
Senior Research Associate
Smart Prosperity Institute
sarajane@smartprosperity.ca
[@SaraONeillatSP](https://www.instagram.com/SaraONeillatSP)

City of Guelph

Impervious Area Distribution



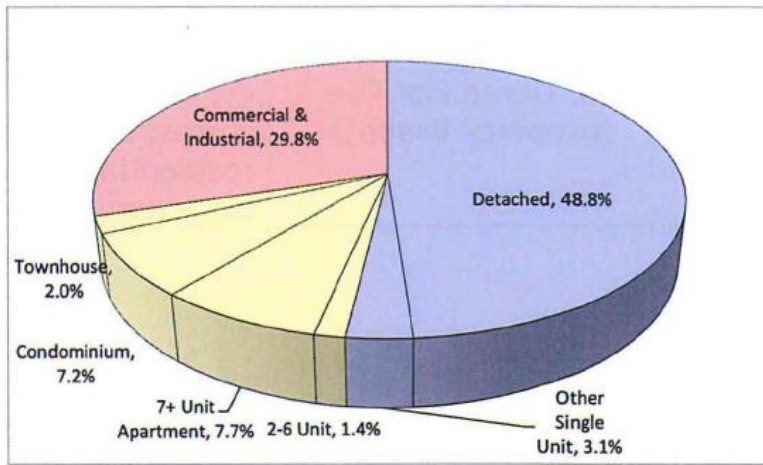
Revenue Distribution



Option 1-Property Tax

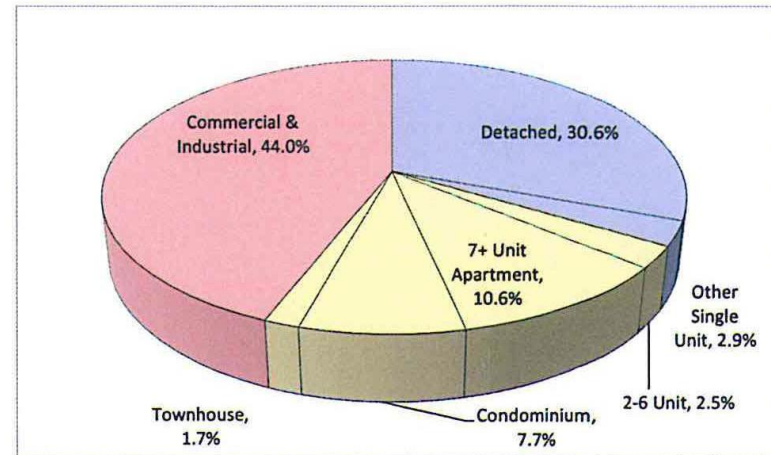
City of Guelph

Revenue Distribution



Option 1-Property Tax

Revenue Distribution



Option 2-Variable Fee (ERU)