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# Community Engagement for Long-Term Success of Green Infrastructure

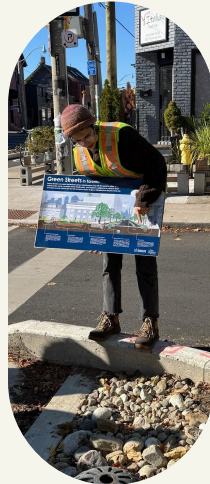
Lessons from the 2025  
"Adopt a Green Infrastructure Site" Program

Luisa Martinez (RAINscapeTO) & Jennifer Leung (City of Toronto)  
For Source to Stream Conference 2026

# Importance of Green Streets O&M

Green Streets assets benefit the public in many ways:

- Improve **community wellbeing**
- Support local **biodiversity & ecosystems**
- **Reduce runoff & pollutant** discharge to lake and ravines
- Increase **climate resilience**
- Contribute to **City identity**
- Improve **relationship to the land**



# Green Streets in Toronto

Interdivisional initiative to **implement Green Infrastructure** in the city right-of-way horticulture spaces



2008

**FIRST GI PILOT SITE**

2013 | 2017

**IMPLEMENTATION PLAN**

COUNCIL DIRECTIVE

3 Pilot Sites

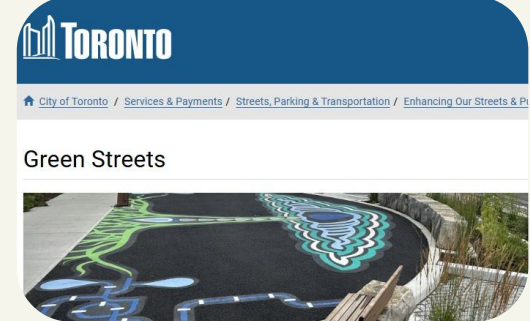
2017 | 2020

**PROCESSES FOR GI IMPLEMENTATION**

Technical guidelines  
Toronto Green Standard  
Engineering Standards  
Asset Management Plan

2021

**ESTABLISHED GREEN STREETS OPERATIONS & MAINTENANCE**



City of Toronto

Transportation  
Services

Operations &  
Maintenance

Green Streets  
O&M

# Operations & Maintenance

**Coordinator:** Transportation Services (City of Toronto)

## Assets:

- Green Infrastructure (GI) Bioretention Systems, Stormwater Tree Trenches, Permeable Pavements
- Right-of-way Horticulture (RH) Non-grassed planter beds as per Roads & Sidewalk By-law Chapter 743

## Maintenance Partners:

- Toronto Water
- Urban Forestry
- Solid Waste
- Private business
- Community groups

**GreenForeceTO (GFTO)** Launched in 2021  
Partnered with two social enterprises:



Eco-landscaping  
specialist

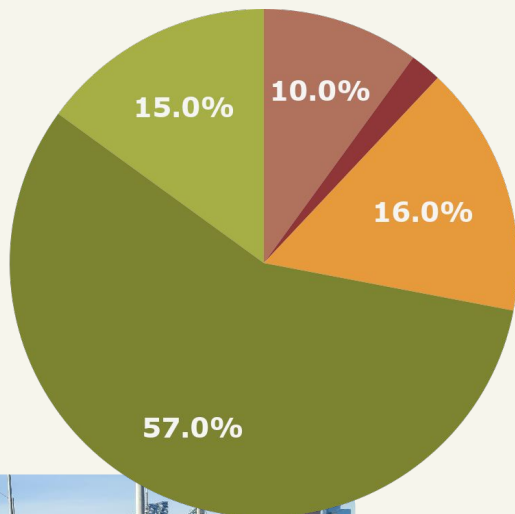


Construction  
pre-apprentice program

# 2025 Green Streets O&M Costs

## Green Streets by Area

- Bioretention
- Permeable pavement
- Stormwater tree trench
- RH Transportation Services
- RH Parks & Rec



	GI	RH: TS
<b>Sites (Asset)</b>	111 (27)	200 (520)
<b>Area in m<sup>2</sup></b>	6,900	50,000
<b>Cost</b>	\$300,000	\$898,000
<b>Total*</b>	\$1,198,000	
<b>Cost/Area</b>	<b>\$44.00/m<sup>2</sup>**</b>	<b>\$17.96/m<sup>2</sup></b>

\* Pre-tax costs

\*\* Costs includes training, infiltration testing, admin, pilot projects, etc

**Avg. unit cost: \$ 30.98 /m<sup>2</sup>/yr**

# Maintenance Cost

Comparing 2025 **unit cost** per square metre (~12 visit/yr) for contracted service.

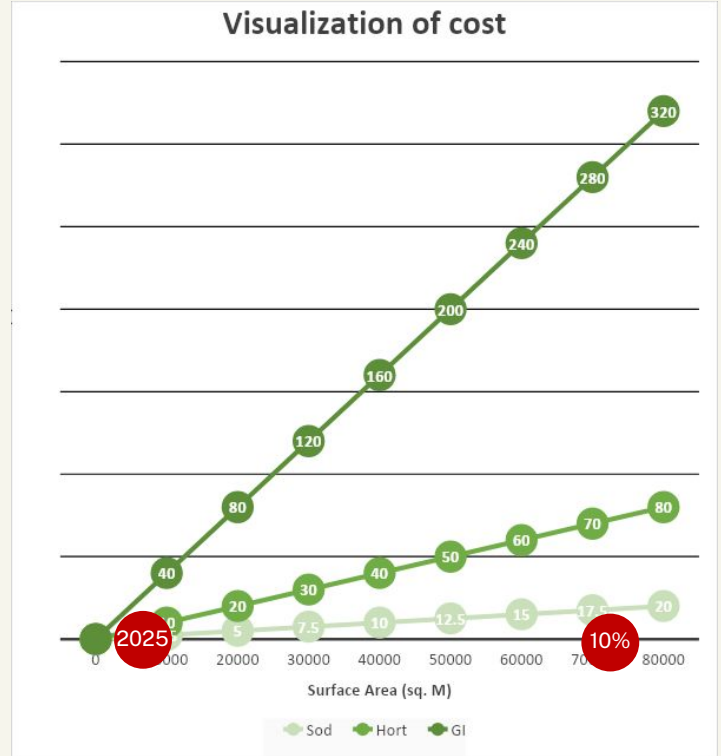
0.25u Grass Cutting

1u ROW Horticulture

4u Green Infrastructure\*

\*Cost includes inspections, workforce development, and a significantly broader scope of work (e.g. infiltration testing, inlet cleaning, routine inspection).

Significant growth expected from upcoming development projects



2025 Current 2025 Scenario (~6,900 sq. m)

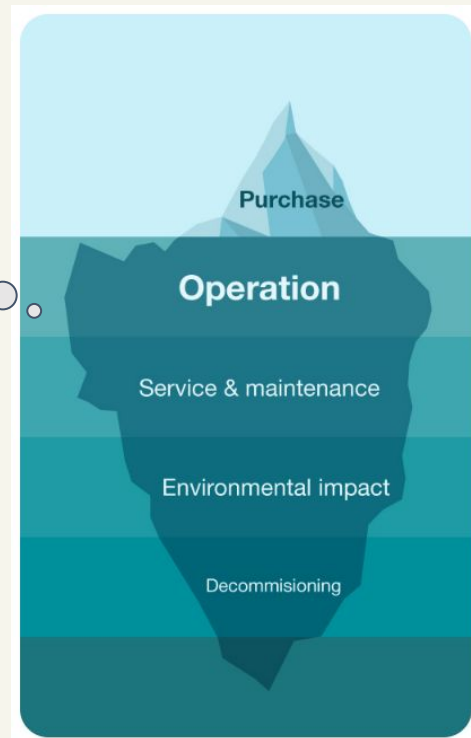
10% 10% of Toronto streets implements a 1.2m continuous bioswale/green gutter with horticulture (~684,000 sq.m)

# 2025-2034 Projected Site & Budget Growth

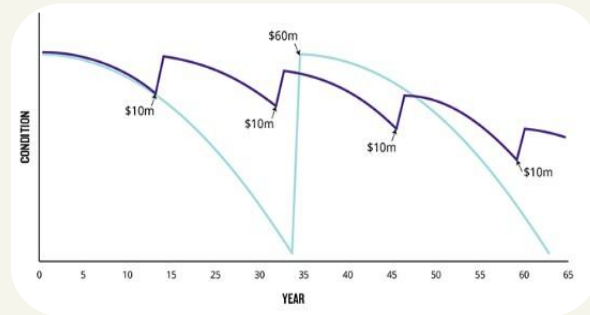
	Green Streets Area	Cost
Current (2025)	56,900	\$1.2mil/yr
2026-28	120,000	\$2.40mil/yr*
2028-2034	<b>165,000</b>	<b>\$4.06mil/yr*</b>

Data Notes: Projections based on 2025 City of Toronto Green Streets Portfolio growth patterns (primarily Bioretention & Tree Trenches). 2034 figures reflect a "Business-As-Usual" scenario, adjusted for inflation (pre-adjustment: \$2.2M and \$3.02M). Estimates are subject to future policy shifts.

**Operations & Maintenance WILL be the largest cost**



# Why a Community Maintenance Model?



Source: Ontario Ministry of Infrastructure

Smart care (dark line)

Reactive care (light line)

## SCALABILITY

Boosting **capacity** for low-difficulty sites.

## AWARENESS

Increasing **environmental literacy** of GI

## OPPORTUNITY

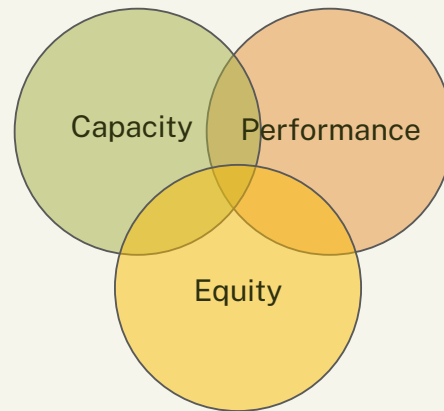
Cultivate **pathways to green careers**

## STRATEGIC CARE

**Reduce total costs by 33%** through timely maintenance “boosts”

*Balancing operational capacity | infrastructure performance | and social equity.*

# Integrated Delivery Model



## Current operation

Centralized crews

Low frequency - high complexity visits

Selective workforce development

Top-down maintenance

VS

## Hybrid community delivery

Decentralized. Reduced travel overhead

Proactive care. High-frequency performance

Career on-ramps. Localized skill-building

Stewardship. Deep community ownership

# Site Selection & Design Suitability

**Asset Type:** Bioretention planters and RH.

**Low-Complexity:** Simple plant palettes & accessible inlets

**Visibility:** Community hubs, passive surveillance

**Safety:** 2 people on site, no high-traffic medians



# PARTICIPANT JOURNEY

## Community-stewardship *Adopt a GI site*



### Site selection

Strategically chosen for their manageable horticultural complexity, safe accessibility, high visibility, and suitability for community-based stewardship.

### Outreach & onboarding



Localized outreach to nearby community groups, neighbourhood networks, local councillors, and digital platforms.



### Training & stewardship

Site handoff includes on-site training to introduce safety procedures, maintenance expectations, and basic tools, with volunteer groups setting their own recurring maintenance schedule.

Participants receive basic tools such as a hi-vis vest, weeding tool, and gloves.

### Monitoring & tracking



Maintenance visits documented through a streamlined reporting form to capture hours, tasks, and observations, supplemented by periodic check-ins from program staff every 4–5 weeks to review progress, reinforce procedures, and address emerging site needs.



### Recognition & Engagement

Ongoing communication maintained throughout the season, with participant feedback gathered and stewardship efforts recognized through public acknowledgment or appreciation events.



fueled by digital reporting & on-site feedback loops



84% volunteer retention

# Hybrid training & Technical competency

On-site technical training + Digital handbook (Theory/reference)

## Performance monitoring:

- Inlet & Drainage
- Ponding & Erosion
- Plant health



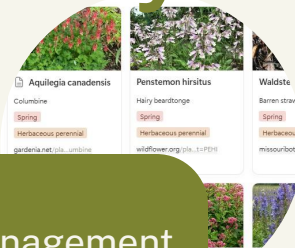
## Safety & Risk Mitigation:

- Mandatory 2-person rule
- PPE & Hi-vis
- Staff support for hazards



## Strategic horticulture:

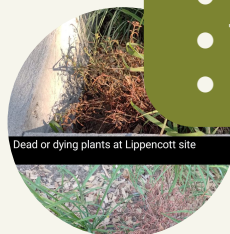
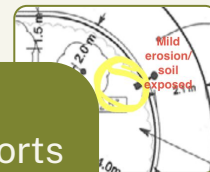
- Proactive “weed” management
- Plant ID & Growth habits
- Targeted pruning



“ Turned an isolated effort into a community habit ”

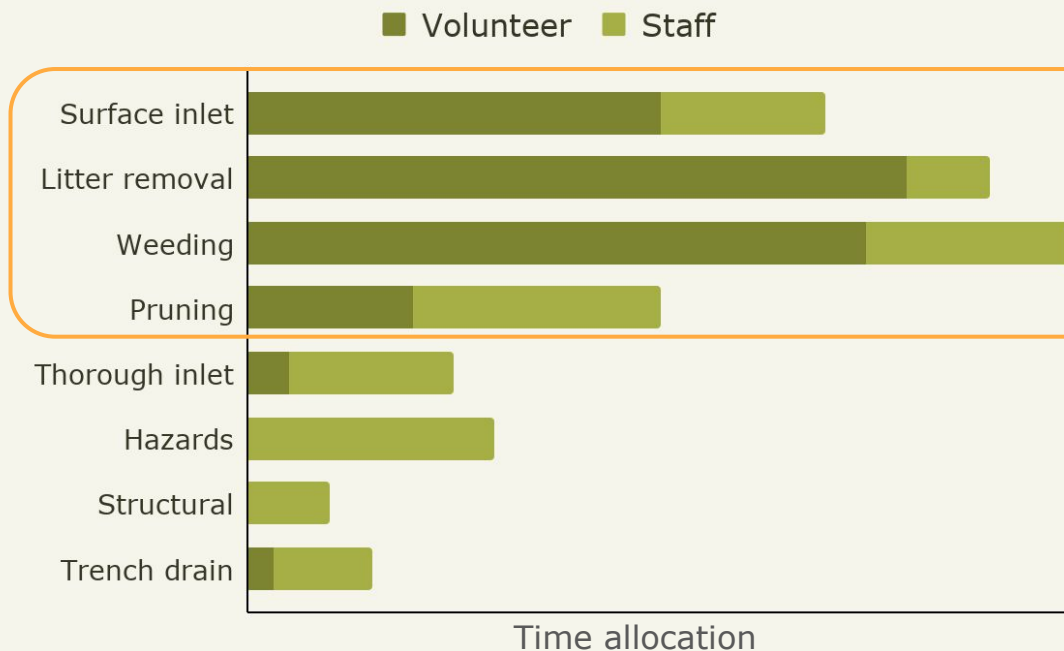
## Digital accountability:

- Real-time mobile reports
- Task & time tracking
- Post-visit feedback loop



“ Finally understood the engineering behind the garden ”

# Tasks & Operational Boundaries



**High-frequency /  
Low-complexity  
tasks**

Volunteers on average visit every 7–14 days, 2.5 hours per visit.

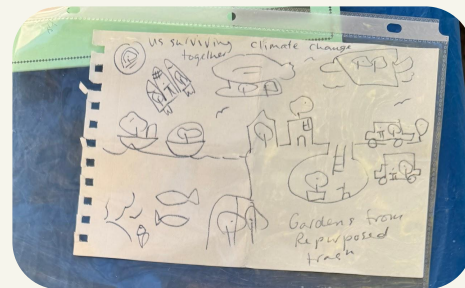
This frequency is higher than most municipal cycles.

# Outcome data: Performance and survival

**Vegetation Health:** >78% Survival Rate of new plantings (vs. 50% municipal avg. for unmanaged sites)

**Social Stability:** 84% Volunteer Retention

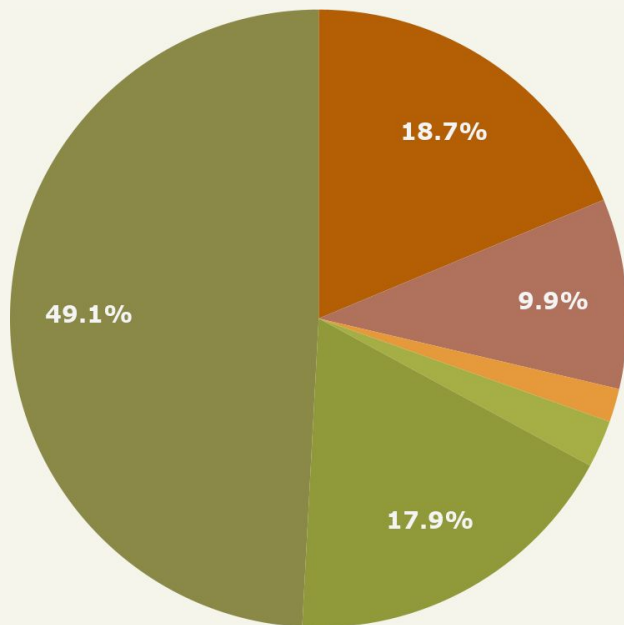
**Weed Pressure:** Significant drop in invasive species density at pilot sites



**> 400m<sup>2</sup> maintained**  
**88% wanting to return**  
**278 plants installed**  
**11 bags of garbage collected**



# ROI of community-led stewardship



● Events & Outreach

● Plants

● Materials

● Shared tools

● Personal tools

● Staffing

**% of overhead and tools expected to drop as program scales.**

- 75% of tool kits are reused seasonally
- Local community ambassadors vs. centralized trainers

Total Investment:  
\$9,026 for 4 sites

**233.5 Maintenance Hours**  
in 20 weeks for > 400m<sup>2</sup>



From recognition to honorariums

- **The barrier:** Time-poverty in underserved neighborhoods.
- The goal: Equitable program reach city-wide
- The solution: A community ambassador stewardship role



# Summary & 2026 Roadmap

	2025 Results	Key Outcome	2026 Strategy
<b>Economic ROI</b> (the potential)	<b>Pilot Cost: \$22.50/m<sup>2</sup></b> vs. \$33.30/m <sup>2</sup> average	<b>~32% reduction</b> in cost Social value: 88% cited "connection and learning"	<b>Community Ambassador</b> Model with role-based honorariums
<b>Design Suitability</b> (where it could work)	<b>"Maintainable by design"</b> Low Complexity, safe, accessible	78% new planting survival 84% Volunteer retention	Prioritizing equity-deserving & "Maintainable by Design" sites.
<b>Hybrid Training</b> (how to make it work)	Hybrid training: Professionalizing Safety, Plant ID & Performance via Digital+On-site	Performance and accountability <b>feedback loop</b>	<b>Workforce development:</b> Accredited career pathways

Balancing *operational capacity* | *infrastructure performance* | and *social equity*.

# Thank you!

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Full 2025 Community-Stewardship Pilot Report



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