Urban Forests in Asset Management Planning

Michelle Sawka, TRCA

MISSISSAUGA

brampton.ca BRAMPTON Flower City

TOWN OF CALEDON

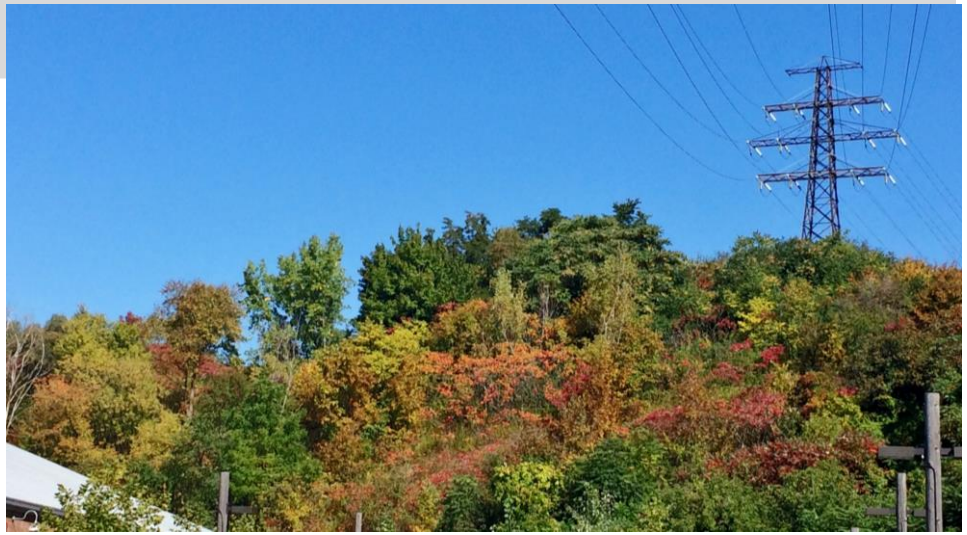
Region of Peel working with you

Credit Valley Conservation inspired by nature

Toronto and Region Conservation Authority

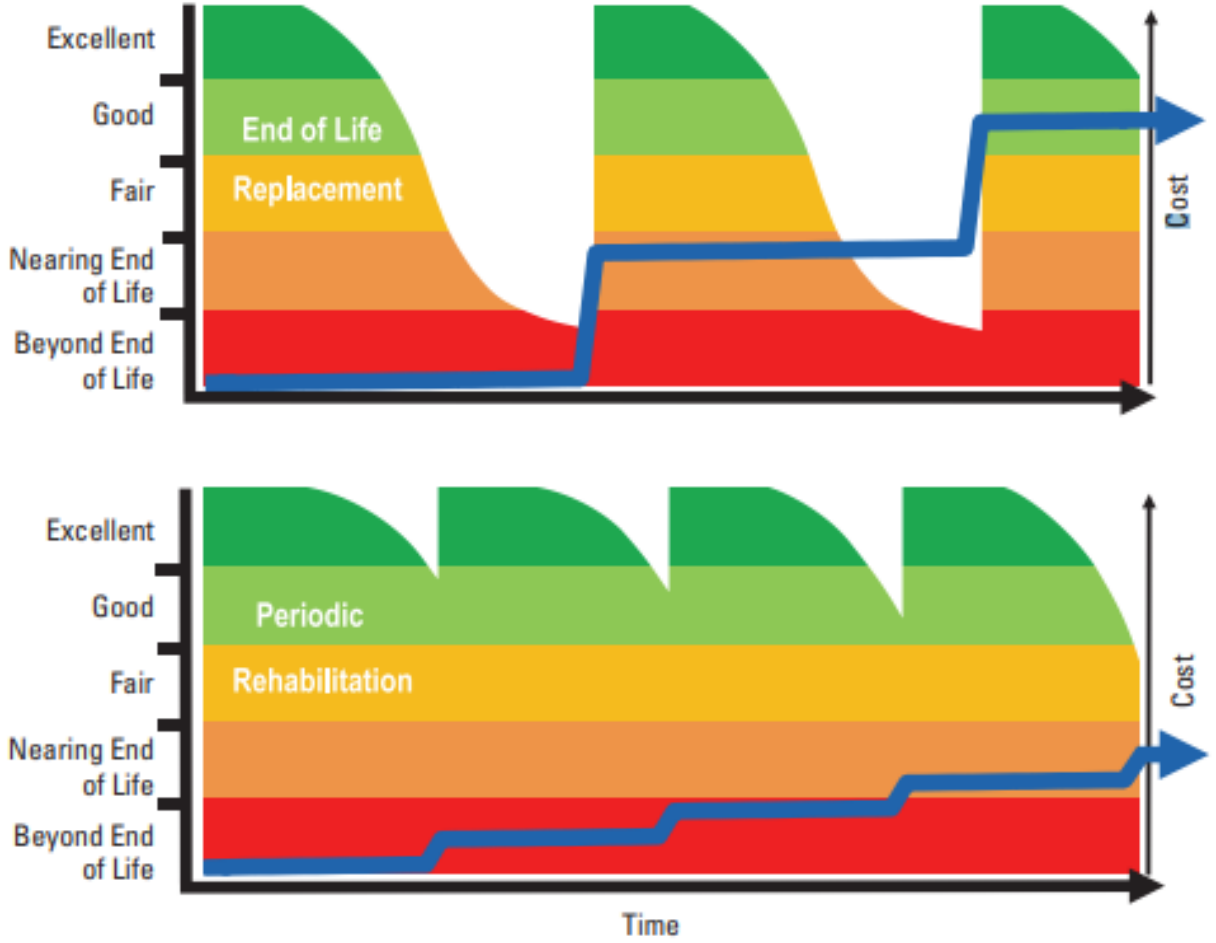
Overview

1. Introduction to Asset Management Planning (5 minutes)
2. Urban Forests & Asset Management Planning (5 minutes)
3. Best Practices, Valuation, and Examples (10 minutes)



Asset Management Planning

- A specific process for managing municipal assets
- Informs decision making by balancing trade offs between service delivery, risks, and costs
- Regular investments can reduce costs and ensure more reliable services



Town of Richmond Hill 2016 Asset Management Plan

Four Stages of Asset Management Planning

1) State of infrastructure

- Asset register & inventory

2) Levels of service

- Metrics on current and proposed services

3) Life cycle management plan

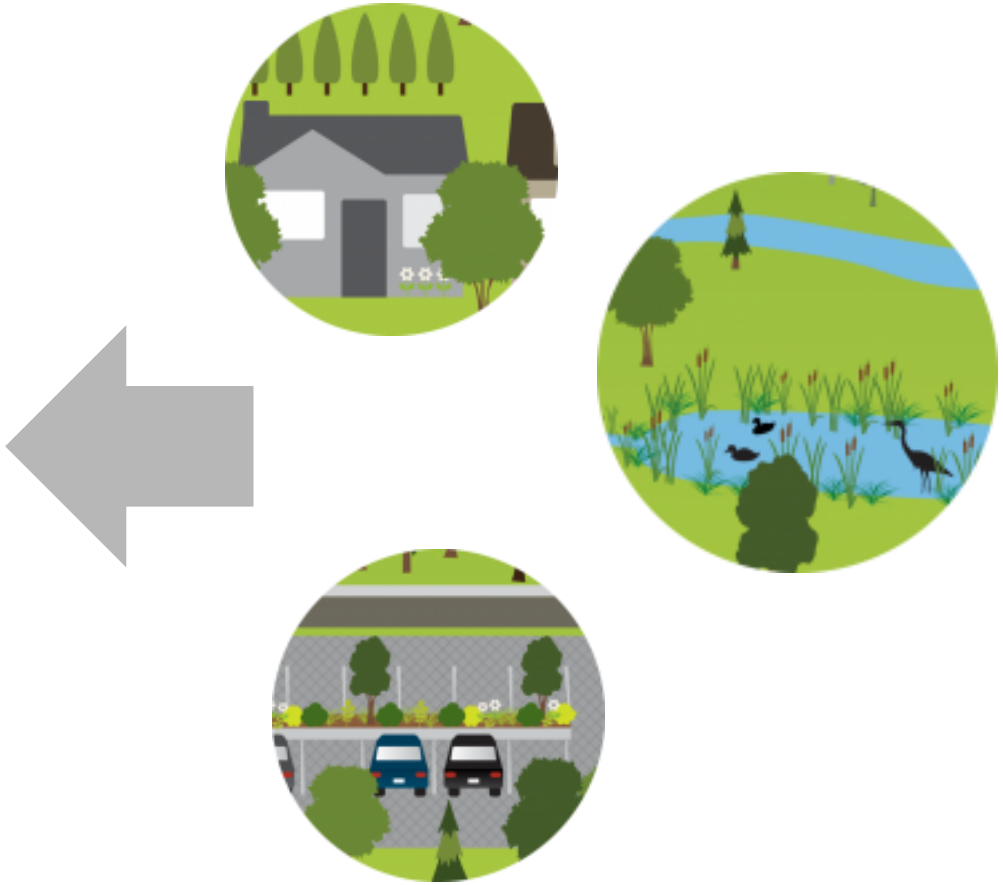
- Management options, risks, costs

4) Financial strategy

- Costs of plan, funds available, shortfalls

Green Infrastructure in Asset Management Planning

Municipal Decision Making

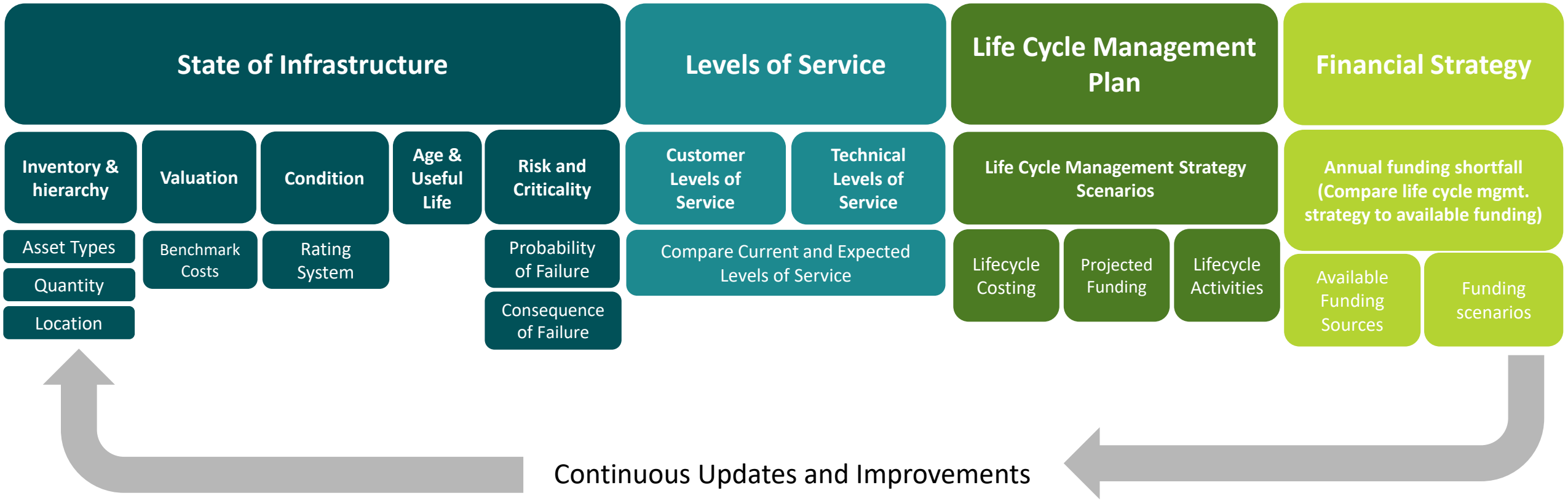


Benefits of Incorporating Green Infrastructure into Asset Management Planning

- Increase priority of green infrastructure relative to grey
- Understand priorities, services, risks, and management options
- Support strategic management to enhance green infrastructure
- Defend budgets
- Eligibility for federal and provincial infrastructure funding

Urban Forest Asset Management Planning

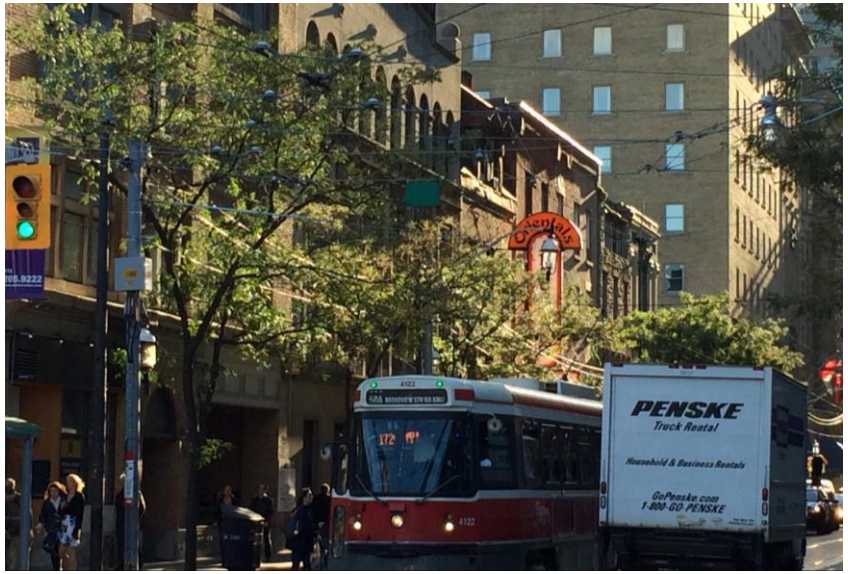
Identify the green infrastructure assets for which you are responsible (do you own or maintain it?)



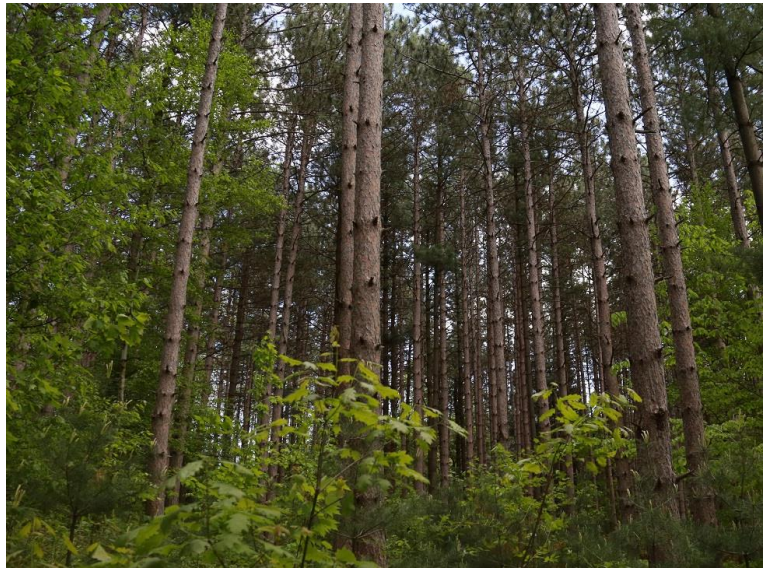
Types of Urban Forest Assets

What a municipality owns or manages

Park Trees



Street Trees



Forests

Differences Between Traditional Assets and Green Infrastructure Assets

Traditional Assets

1. Must be constructed or bought
2. Have an end of life and must be replaced
3. Provides one or two services
4. Expected service levels achieved after construction/installation

Green Infrastructure Assets (some)

1. Naturally forming
2. They have no end of life – don't need replacement
3. Many services provided
4. Desired service capacity can take months to decades to achieve

Asset Management Planning in Ontario

Asset Management Planning for Municipal Infrastructure Regulation, O. Reg. 588/17 (January 2018)

5. (1) Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2021, and in respect of **all of its other municipal infrastructure assets by July 1, 2023.**

Definitions

"municipal infrastructure asset" means an infrastructure asset, **including a green infrastructure asset,** directly owned by a municipality or included on the consolidated financial statements of a municipality, but does not include an infrastructure asset that is managed by a joint municipal water board

"green infrastructure asset" means an infrastructure asset consisting of natural or human-made elements that provide ecological and hydrological functions and processes and includes natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs

Example – City of London, Ontario

Section 12: Urban Forestry

Asset Type	Asset
Street trees	Street trees within road allowance
Manicured park trees	Trees in manicured portions of parks (1566 hectares)
Woodlands Trees	Trees in woodlands or wooded portions of parks (1203 hectares)

Example – York Region

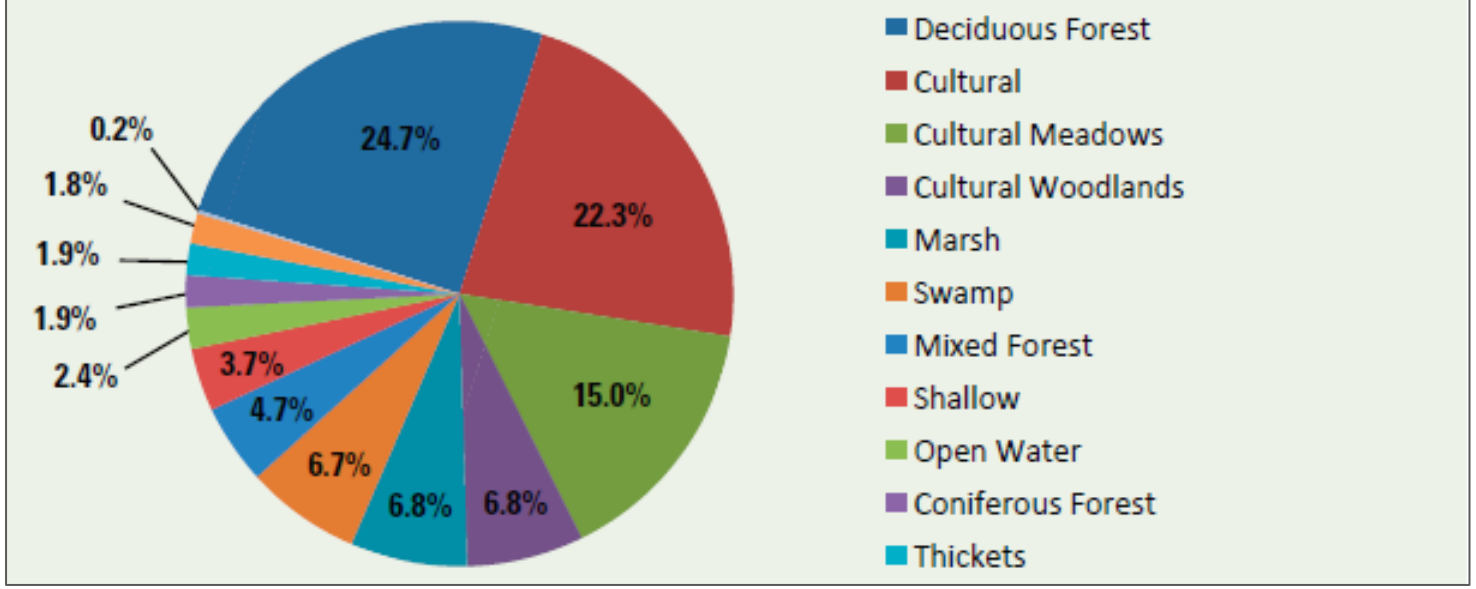
Environmental Services	Energy Management	Solar arrays and associated equipment.
	Forestry	The urban forest including street trees, growing medium and planters, the York Regional Forest including trails and structures ponds and drainage, and a forestry stewardship centre including outbuildings.
	Waste Management	A materials recovery facility including process equipment, transfer stations, household hazardous waste depots, community environmental centres, facilities, and co-ownership of an energy from waste facility.
	Wastewater | CORE ASSET	Water resource recovery facilities, a wastewater treatment lagoon, equalization tanks, odour control facilities, wastewater pumping stations, sanitary forcemains, trunk sewers, maintenace holes and chambers.
	Water | CORE ASSET	Water treatment plants, groundwater wells, elevated tanks, pumping stations, storage reservoirs, transmission mains, water chambers and maintenance holes.

Example – Richmond Hill

Table 18: Environmental Assets Inventory and Current Value

Asset Class	Replacement Cost (2014 dollars)	Quantity	Data Confidence
Street Trees	$13.4 M	43,217 trees	Intermediate
Natural Areas - Forest	$74.2 M	696.2 hectares	Intermediate

Figure 38: Vegetation Communities in Richmond Hill's Natural Areas



Example – City of Hamilton (State of Infrastructure)

FORESTRY AND HORTICULTURE

Asset Type	Asset Component	2009 Inventory	2016 Inventory	Change	% Change
Urban Forest	Road Allowance (trees)[2]	181,900	201,305	19,405	11%
	Urban and Rural Parks (trees)	64,200	68,468	4,268	6.6%
Rural Forest	Road Allowance (trees)[2]	107,000	103,545	-3,455	-3.2%
	Natural Areas (trees)	535,000	547,650	12,650	2.4%
Horticultural Features	Road Allowance (floral)[2]	449	372	-77	-17%
	Parks Shrub Beds (floral)[3]	599	28,862	-	-
	Parks Annual Beds (floral)[3]	-	2,818	-	-

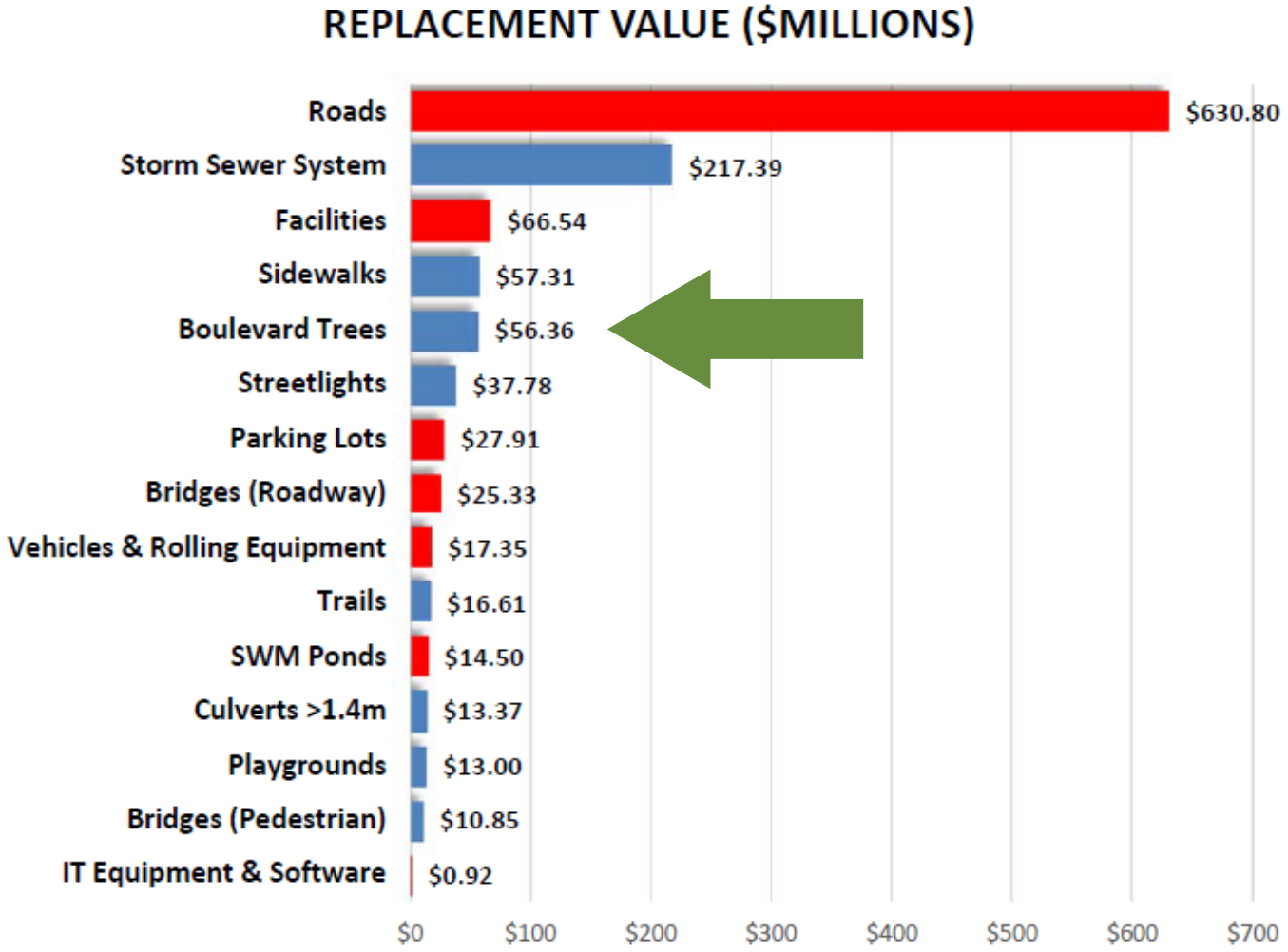
Example – City of Newcastle, Australia

Service Output	Asset Stock	
Aquatic Centres	5 Aquatic Centres 2 Ocean Bath Facilities	
Arts and Cultural Facilities	1 Museum Facility including collections 1 Art Gallery Facility including collections 1 City Hall Facility 1 Civic Theatre Facility	1 Fort Exhibition Facility 1 Historic Fort 147 Public Art, Fountains and Monuments
Bushland, Watercourses and Public Trees	88 Bushland Parcels totaling 4.8Mill sqm 97,428 Street and Park Trees 607 Creek Reaches totaling 79km	42 Inland Clifflines totaling 20,444 sqm 45,269m of tracks and trails 106 Nest Boxes
Car Parking	1 Parking Station	108 Off Street Carparks
Caravan Park	1 Holiday Park	
Cemeteries	3 Cemeteries	
Child Care	11 Child Care Centres	
Coastal, Estuary and Wetland	12 Beaches (6 Main) 4.5 km Dunes 3 Lifeguard Facilities 3 Boat ramps	63 Wetlands covering 187ha 21 Coastal clifflines totalling 3.6km 29 sea and river walls totalling 1.1km 9 Rock platforms totalling 3.3km
Community Buildings	3 Senior Citizen Facilities 9 Community Centres 7 Community Halls	8 Surf Clubs 1 Neighbourhood Centre 7 Scout/Guide Halls
Libraries	9 Library Facilities including collections	
Parks and Recreational Facilities	54 Sporting Amenities Facilities 116 Playgrounds 15 Grandstands 18 Kiosks 15 Animal Enclosures 115 Shade and Shelter Structures	8 Skate facilities 65 Support Buildings e.g. clubhouses and sheds Support structures e.g. fencing, flagpoles, scoreboards, lighting
Public Amenity	39 Public Toilet Facilities	

How Asset Value is Used

- Informs long-term asset management and financial management decisions
- Internal and external reporting
- Allows for **comparison** between service areas and asset categories

Why green infrastructure assets need to use the same method



Ajax, 2017

Asset Management Planning Valuation

Current Replacement Cost

- Assets do not need to be tangible capital assets (TCAs) to be included in asset management plans
- Does not use ecosystem services valuations

Replacement Cost Method: Street Trees

- Data Needs:

Benchmark Cost ($/tree)
Quantity (number of trees)
Tree Diameters (optional)

Calculate Value:

Replacement cost = Benchmark cost x Quantity

York Region GI AMP 2017: Condition Criteria for Street Trees

		Grade	1 / A	2 / B	3 / C	4 / D	5 / E
		Condition	Very Good	Good	Fair	Poor	Very Poor
		LoS	*Conforming Level*	*Conforming Level*	*Observation Level*	*Intervention Level*	*Non-Conforming*
STREET TREES	Status		Thriving	Satisfactory	Potential Trouble	Declining	End of Life
	Health		Perfect specimen with excellent form and vigor, well-balanced crown. Likely to exceed life expectancy.	Imperfect canopy density in 10% of tree, Less than half normal growth rate; pest damage controllable. Typical life expectancy.	Crown decline and dieback up to 30% of the canopy. Obvious signs of pest problems. Below average life expectancy.	Significant dieback affecting larger branches. Stunting obvious with obvious pest problems. Life expectancy is low.	Will likely die within 5 years.
	Management		Implement routine maintenance	Implement routine maintenance	Requires corrective pruning	Requires major corrective pruning, or replacement	Will require replacement or removal

City of London – Condition Profile

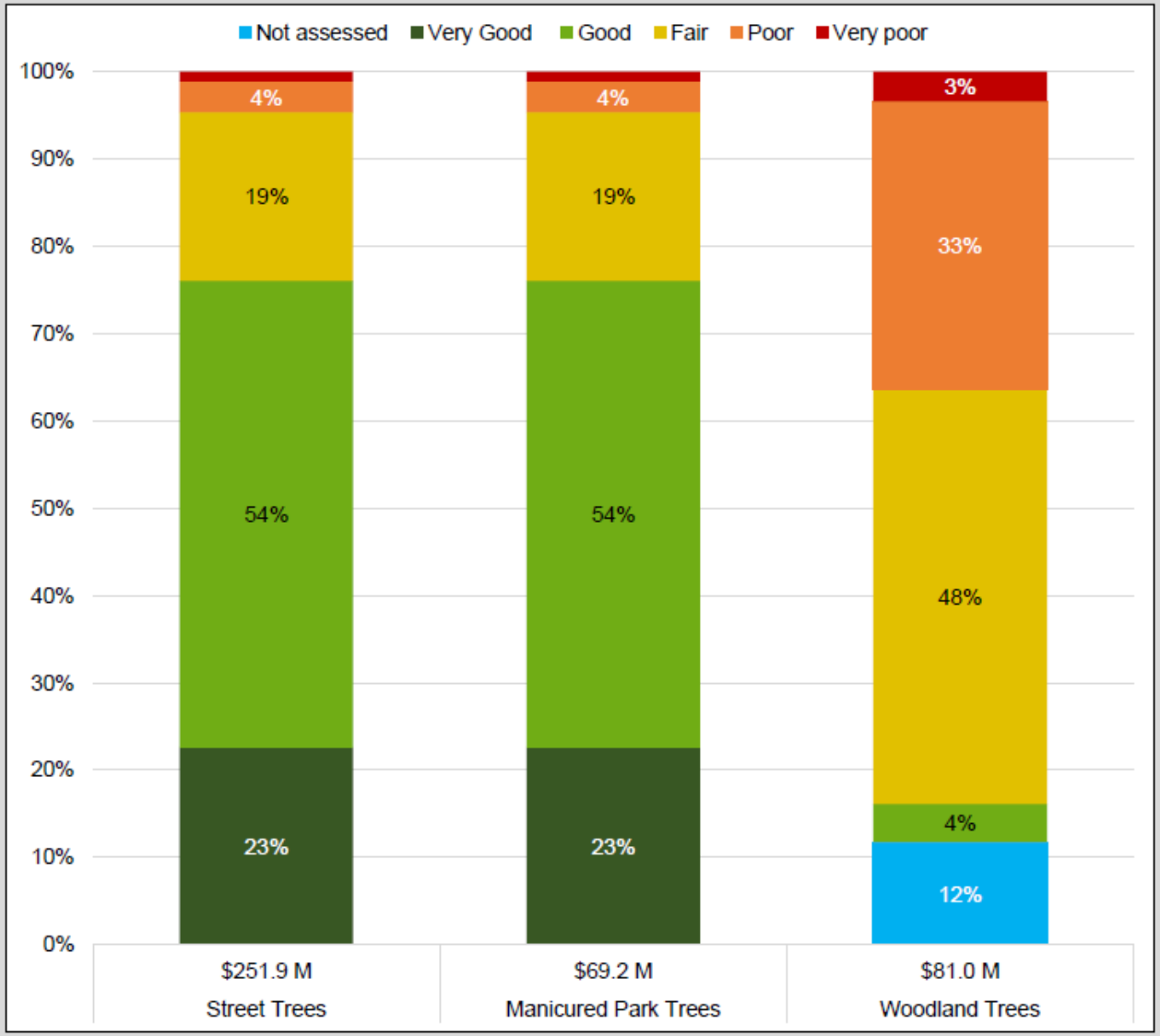


Figure 12.4 Asset Condition Detail (Urban Forestry Services)

Conclusions

- Many urban forest assets have been successfully included in asset management plans
- Assets do NOT need to be Tanglible Capital Assets (TCAs) to be included in asset management plans
- There are differences between urban forest assets and traditional infrastructure, but there are strategies for addressing those differences
- All the data isn’t required before you can start to integrate urban forest assets into asset management plans

More Training?

www.greeninfrastructureontario.org/gi-asset-management-planning/

Email: info@greeninfrastructureontario.org

Peel Region Urban Forest Best Practice Resources Webinar

Question and Discussion Period

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