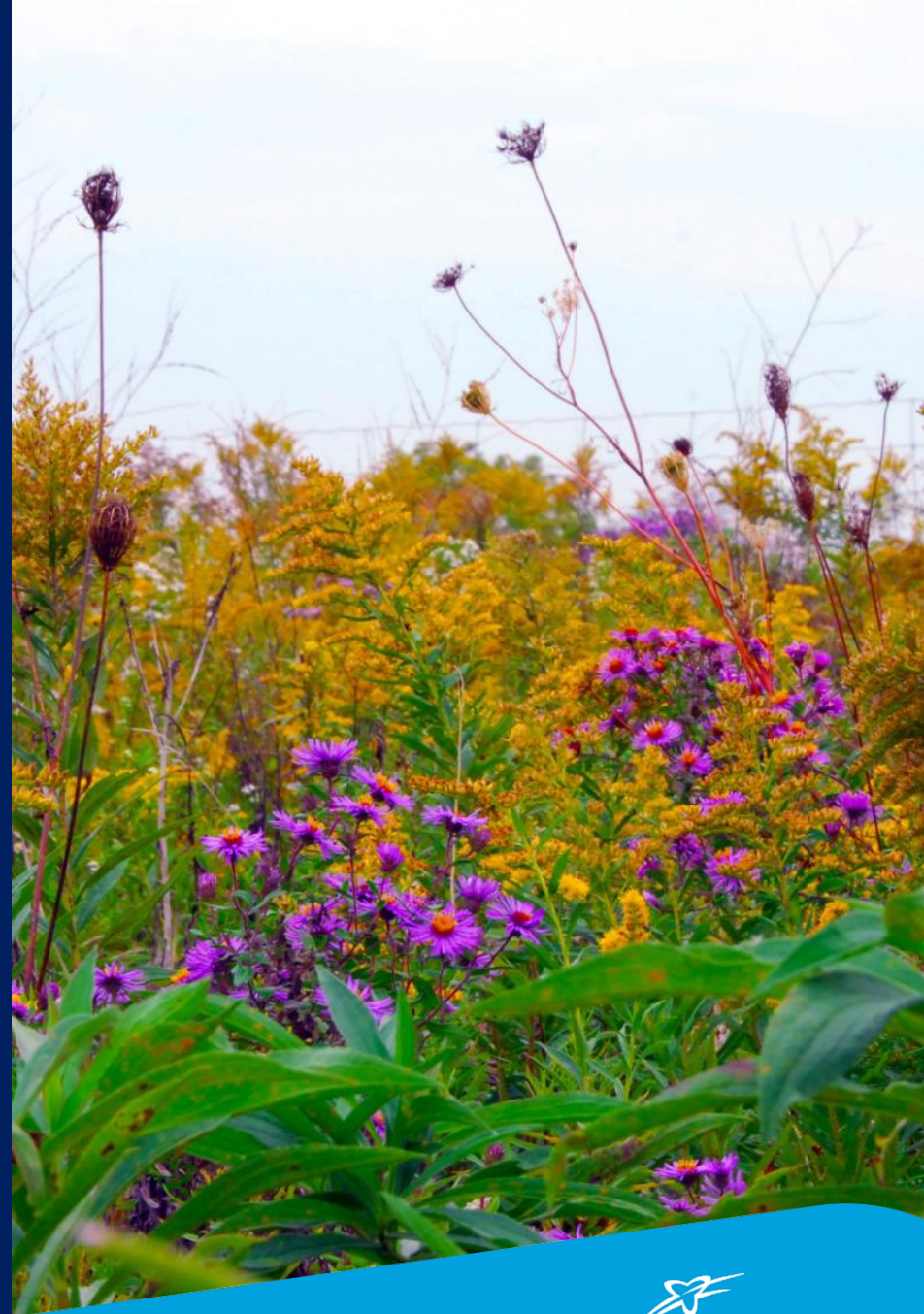


Planning for a Greener Tomorrow

York Region's Green Infrastructure Asset Management Plan

Kyle Heeley, Regional Greening Coordinator
The Regional Municipality of York



Overview

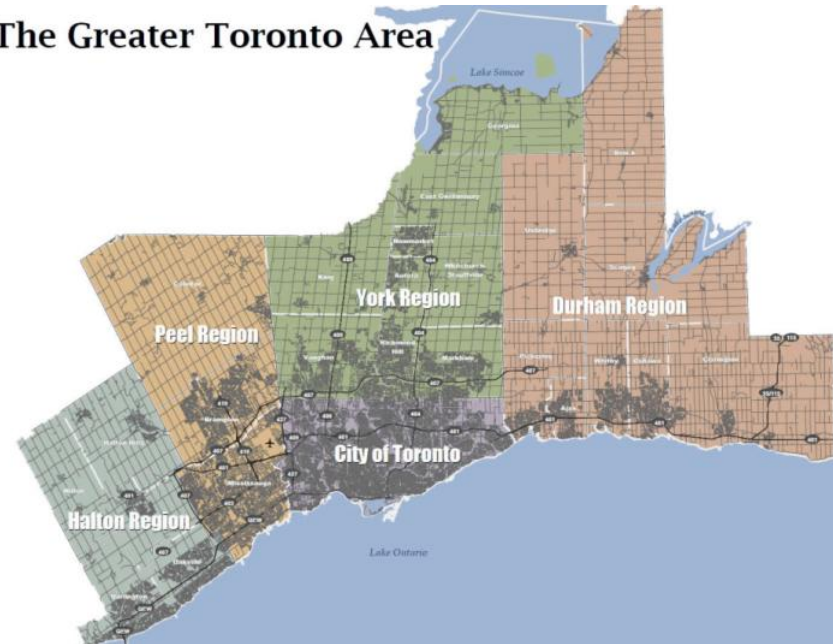
- What is asset management
- Why manage green infrastructure as an asset
- Incorporating green infrastructure in asset management
- Green Infrastructure Asset Management Plan
- Putting the plan into action



Regional Municipality of York

- Upper tier municipality located in the Greater Toronto Area of Ontario
- 1766 sq. KM
- Population of 1.11 million
- Provides Regional Services
 - Policing and land ambulance
 - Water and waste water treatment
 - Regional or arterial transportation system including transit

The Greater Toronto Area



What is Asset Management

- An asset is an item, thing or entity that has potential or actual value to an organization (ISO-55000-2014)
- Asset management is the coordinate activity of an organization to realizes value from assets (ISO-55000-2014)
- Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets.
- The objective is to maximize value, manage risk, and provide satisfactory levels of service to the public in a sustainable manner.



Why Manage Green Infrastructure as a municipal Asset

- Recognize and communicate the benefits provided by green infrastructure
- Provides a defensible approach to identifying investment requirements – levels the playing field
- Increase access to infrastructure funding programs
- Green infrastructure can provide a lower cost solution than traditional grey infrastructure



Municipal Asset Management in Ontario

- Ontario Regulation 588/17: Asset Management for Municipal Infrastructure – sets the minimum requirements for asset management
- Regulation includes green infrastructure in the scope of municipal infrastructure
- Requires that municipalities prepare asset management plans which include green infrastructure by July 1, 2023



Types of Green Infrastructure Assets

- Biological or living assets, including:
 - Street or park tree
 - Forest/woodland
 - Soil
 - Wetland
- Engineered or civil assets, including:
 - Soil cell
 - Rain garden
 - Permeable paving



Green Infrastructure Asset Management at York Region

- 2013, 2015 and 2017 – Green infrastructure included in state of the infrastructure reporting
- 2014 - Green infrastructure included in the development of a Environmental Services Asset Management Strategy (draft)
- 2017 – Complete the development of its first Green Infrastructure Asset Management Plan



Green Infrastructure Asset Management Plan

- Joint project between Forestry and Infrastructure Asset Management
- Plan included all assets managed by the Forestry Division
- Plan followed the Ministry of Infrastructure Guide
- Key components included:
 - State of the infrastructure
 - Levels of service
 - Asset management strategy
 - Financing strategy
 - Continuous Improvement



Green Infrastructure Asset Portfolio

- Assets organized into biological assets and civil assets under three categories:
- Urban Forest
 - Biological – street trees, shrubs, perennials and growing media
 - Civil – soil cells, irrigation and drainage
- York Regional Forest
 - Biological – vegetation communities
 - Civil – trails, parking lots, fences, culverts, etc.
- Bill Fisch Forest Stewardship and Education Centre



Urban Forest Asset Valuation

What is the most appropriate and defensible method to value urban forest biological assets?

- Street trees – Use CTLA trunk formula method
- Shrubs and perennials – replacement cost
- Growing media – replacement cost
- Assessed ecosystem services using I Tree Eco
- Civil assets valued using depreciated replacement cost



York Regional Forest Asset Valuation

What is the most appropriate and defensible method to value Regional Forest biological assets?

- Forests – Timber value, land value, re-establishment cost
- Wetlands and prairies – land value, re-establishment (future)
- Assessed ecosystem services using I Tree Eco
- Civil assets valued using depreciated replacement cost



Asset Valuation Results

- Results show extent of assets in York Region
- Needed to Define levels of service provided by green infrastructure
 - Community level of service
 - Technical level of service
 - Performance measures
- Needed to define life cycles for assets
 - Street Trees
 - Urban – 35 years
 - Suburban – 44 years
 - Rural – 53 Years
 - York Regional Forest – Continuous with maintenance

	Asset Group	Valuation
Urban Forest	Biological Assets	421,493,342
	Civil Assets	1,981,140
	Urban Forest Total	423,474,482
YRF	Biological Assets	22,788,989
	Land	30,483,900
	Civil Assets	6,976,624
	York Regional Forest Total	60,249,513
Bill Fisch Forest Stewardship and Education Centre	Civil Assets	4,577,174
	Bill Fisch Forest Stewardship and Education Centre Total	4,577,174
	TOTAL	\$488,301,169

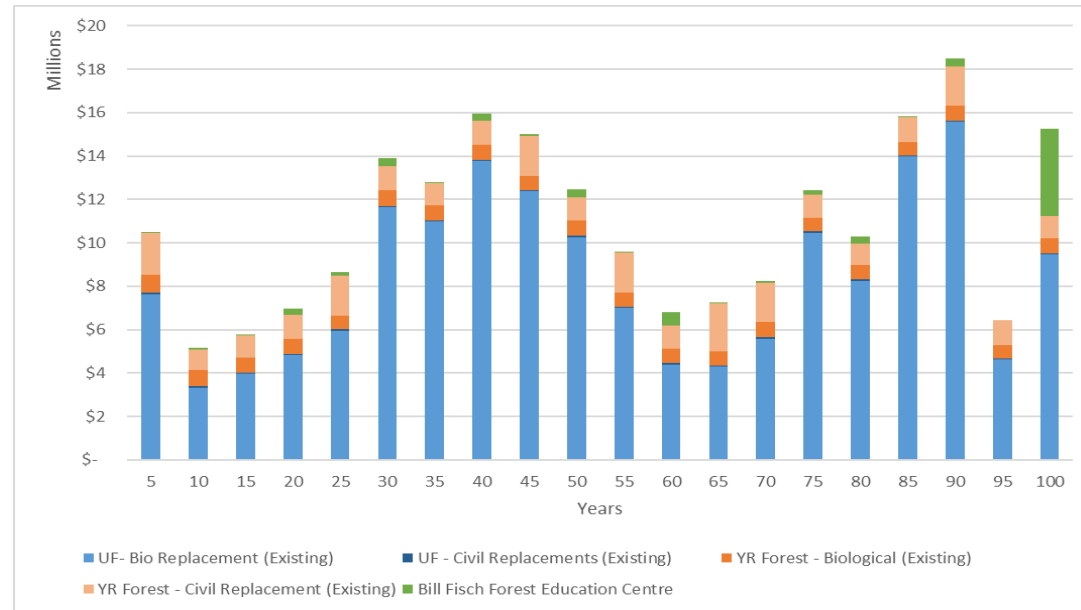
Green Infrastructure Asset Management Strategies

TABLE 4-6 – URBAN FOREST MANAGEMENT STRATEGIES (BIOLOGICAL ASSETS)

Management task		Type	Treatment Location & Rationale	Frequency	Delivery
Trees					
Planting (Under Warranty)	Installation	Capital	To upgrade Regional corridors not meeting current landscaping standards, and to support transportation renewal plans. Additional warranty for 1 year if tree replaced under warranty.	As suitable transportation corridors are refurbished	Contract
	Watering	Capital	To ensure healthy establishment of new trees.	14 times each summer season (weekly) for 3 growing seasons	Contract
	Warranty Maintenance	Capital	Re-mulch at end of year 1. Re-mulch, fertilize, and remove stakes, watering bags at end of warranty (year 2). Conifer trees are wrapped in burlap during the first two winters.	At milestones as per establishment plan	Contract
	Tree Inspections	Capital	Detailed inspection at the time of planting and at least 1 warranty inspection per tree.	Assessed during the 3rd growing season.	YR Staff
Juvenile Tree Maintenance		Maintenance	Structural pruning, mulching, fertilizing. An average of 4 treatments per tree.	Every 3 years, post warranty period	YR Staff
Intermediate Tree Maintenance		Maintenance	Structural pruning.	Every 7 years	Contract
Mature Tree Maintenance		Maintenance	Removal of dead or hazard trees and pruning of hazard trees to manage risk in public rights of way.	Every 4 years plus requests and emergency tree work as required	Contract
Tree Removal and Stumping		Capital	All trees are removed and stumped at end of life.	As required	Contract

Financial Strategy

- Funding plan to put asset management strategies into action, required investment to meet service levels
- Key outcomes from financial strategy
 - Need to review service levels and return on investment for some treatments
 - Need to establish reserve to minimize impacts of funding peaks



Putting the Plan into Action

- The plan has resulted in securing additional capital funding to ensure proper maintenance of assets
- Implementing improvements in data collection and management
- Identified the need for a forestry replacement reserve
- Plan meets the requirements of Ontario Regulation 588/17
- Plan scheduled for review and update in 2021





One Region, One Environment

Questions

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