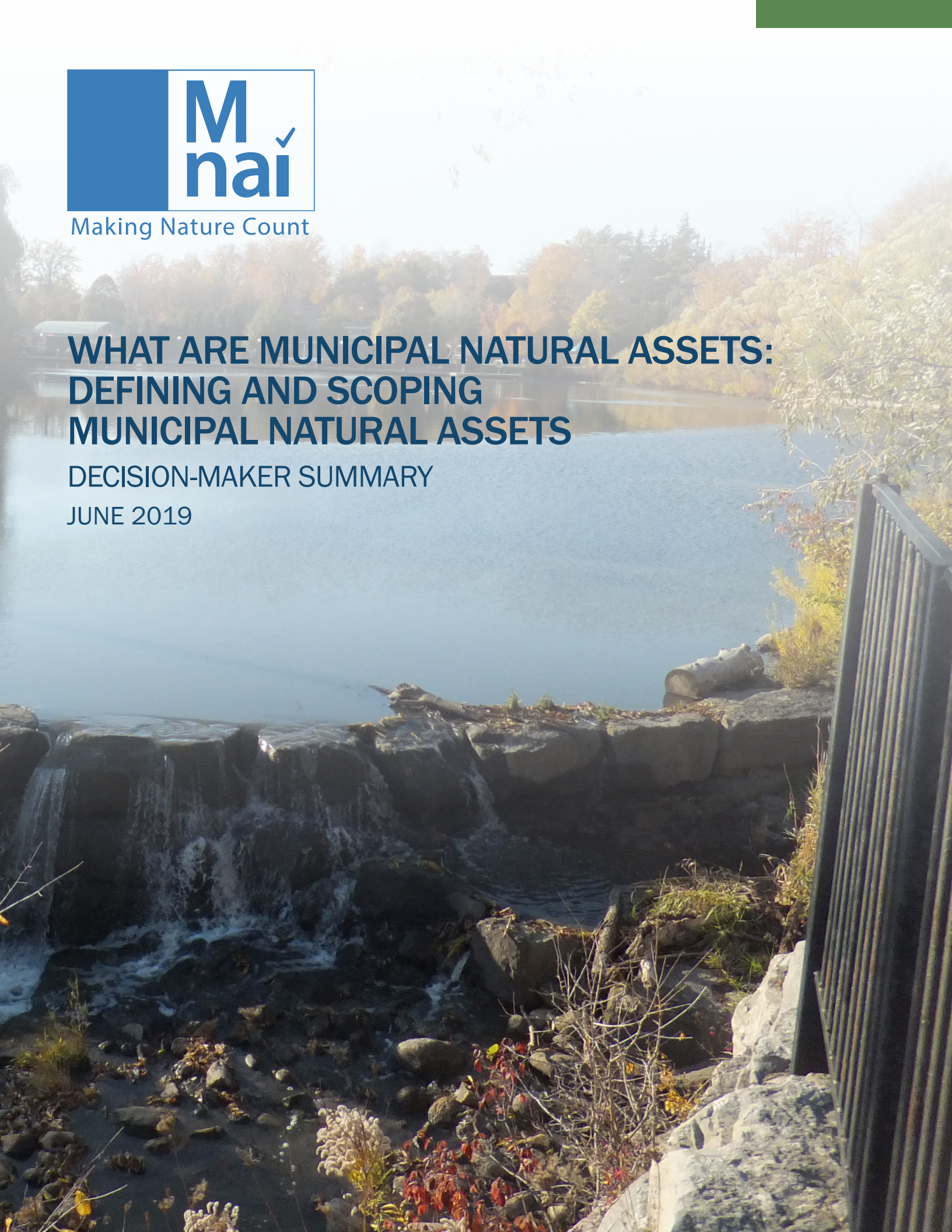
Making Nature Count

# WHAT ARE MUNICIPAL NATURAL ASSETS: DEFINING AND SCOPING MUNICIPAL NATURAL ASSETS

## DECISION-MAKER SUMMARY

JUNE 2019



# THE MUNICIPAL NATURAL ASSETS INITIATIVE: INVESTING IN NATURE

**The Municipal Natural Assets Initiative (MNAI) is changing the way Canadian municipalities deliver everyday services, increasing the quality and resilience of infrastructure at often lower costs and reduced risk. The MNAI team provides scientific, economic and municipal expertise to support local governments in identifying, valuing and accounting for natural assets in their financial planning and asset management programs, and in developing leading-edge, sustainable and climate resilient infrastructure.**

## Decision-Makers Summary Series

This summary report is the first of a series designed to provide local governments with easy-to-access information to help with adoption of municipal natural asset management. These summaries have been drawn from five reports published by MNAI between 2017-2019. Copies of these reports and complete lists of sources are available at: www.mnai.ca. Municipal decision-makers, staff with responsibility for managing municipal assets, and financial and accounting staff will find the information helpful in building and scaling up their own municipal natural asset management efforts. Further, it may be of interest to asset managers in provincial and federal governments, natural resource companies, and universities as early evidence suggests municipal natural asset management approaches can be adapted in other decision-making contexts.[1]

The summary focuses on defining and scoping the emerging concept of municipal natural assets, how it relates to already established concepts such as natural capital, natural assets, and green infrastructure. It outlines a number of approaches that municipal governments can take to manage these assets, such as direct asset management, shared natural asset management, and supporting policies, bylaws, plans and guidelines.

# MNAI Summary Report Series

1. *What are Municipal Natural Assets? – Defining and Scoping Municipal Natural Assets*
2. *Advancing Municipal Natural Asset Management Through Financial Planning and Reporting: Learning from the Town of Gibsons' Experience*
3. *Advancing Municipal Natural Asset Management Through Collaborative Strategies for Private Lands*
4. *Advancing Municipal Natural Asset Management Through Professional Planning: Twelve Action Steps*
5. *Advancing Municipal Natural Asset Management Through Infrastructure Funding Opportunities*

Copies of these reports, complete with sources and many other resources are available at www.mnai.ca.

# Acknowledgements

This is a summary of *Defining and Scoping Municipal Natural Assets* prepared by Smart Prosperity Institute and MNAI.

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Funders and Supporters: This summary series has been financially supported by the Climate Change Adaptation Program of Natural Resources Canada, the B.C. Ministry of Municipal Affairs and Housing, and the Friends of the Greenbelt Foundation.

# Introduction

Canadian local governments are seeking new strategies to deliver their core services in more financially and environmentally sustainable ways, including implementing municipal asset management as a key tool to manage infrastructure.[2] Municipalities are increasingly recognizing that natural assets[3] such as aquifers, forests, streams and foreshores can provide equivalent or better services than many engineered assets. Moreover, they can often do so at a fraction of the cost of engineered assets, and usually provide additional benefits such as increased community resilience to extreme weather events. Municipal natural asset management offers a sustainable solution to the multifaceted problems of supplying municipal services in the face of aging infrastructure, urban growth, and declining budgets.

Municipal natural asset management is being implemented in a growing number of Canadian municipalities. An understanding of what will facilitate versus hinder its widespread implementation is, however, still limited. Historically, natural assets have not been considered on equal footing with engineered assets, nor have they been included in asset management plans. Local governments also lack policies to measure and manage natural assets. As municipal infrastructure asset management processes evolve, all assets providing municipal services—natural assets, as well as roads, bridges and buildings—should be appropriately identified and managed. As such, a clear definition of 'municipal natural assets' is needed to establish a common basis of understanding.

# What is a Natural Asset?

What are natural assets?[4] To date, they have been more commonly referred to as '*natural capital*' – an economic metaphor for the earth's limited stocks of physical and biological resources.[5] From these stocks, '*ecosystem goods and services*' flow like interest or dividends (Figure 1), supporting and influencing all life on earth. *Ecosystem goods* are the products from natural capital such as food, fibre, clean air, and water. *Ecosystem services* are the less tangible but no less significant benefits from ecosystem processes such as nutrient cycling, water purification and climate regulation, and non-material benefits such as recreation, aesthetic and cultural benefits.

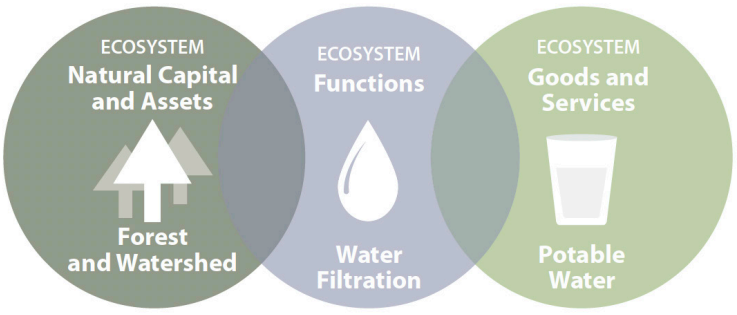



*Figure 1: Natural Capital creates Ecosystem Goods and Services*[6]

The terms natural assets and green infrastructure are also often used interchangeably, but the former is a subset of the latter. Green infrastructure also includes designed and engineered elements created to mimic natural functions and processes in the service of human interests (Figure 2). While green infrastructure can provide many ecosystem services, most current emphasis pertains to ecological and hydrological functions and processes for managing water: stormwater management systems, parklands and urban forests, green roofs and permeable surfaces.[7] In the *Ontario Provincial Policy Statement 2014*, green infrastructure is defined as "natural and human- made elements that provide ecological and hydrological functions and processes."[8] Other terms related to green infrastructure include low impact development, rainwater management, or natural stormwater management. In Canada, there are additional variations: the Government of Canada, for example, includes clean energy in its definition of green infrastructure,[9] and often uses "living green infrastructure" as a more common definition.

**This summary focuses only on the natural asset portion of green infrastructure.**

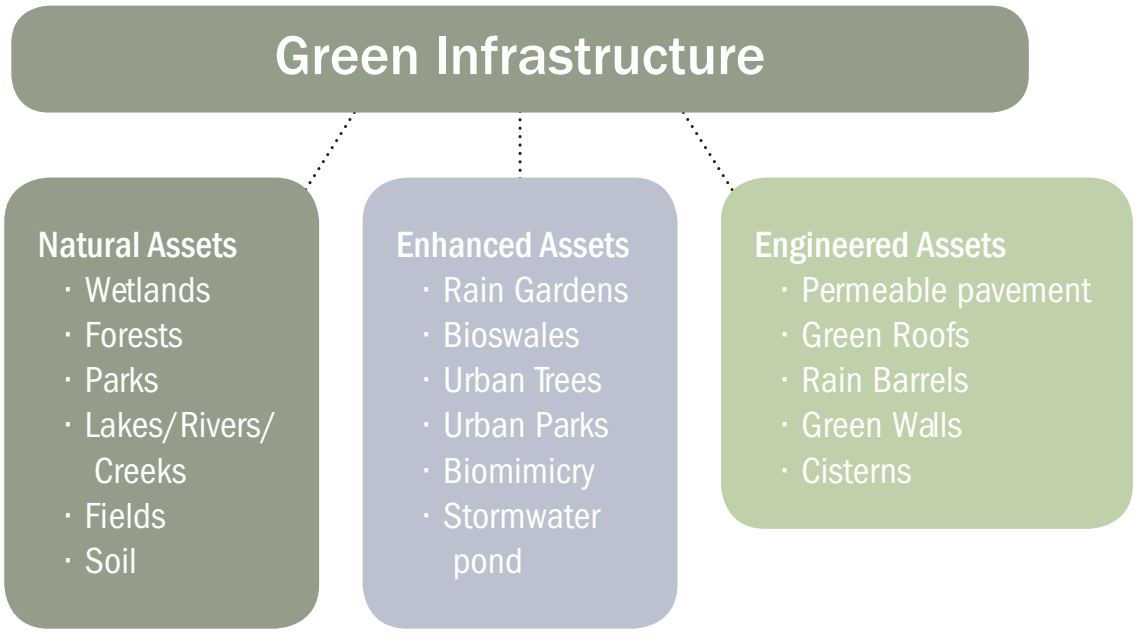



*Figure 2: Elements of Green Infrastructure. Enhanced assets are generally those assets which have been designed to act like natural assets, whereas engineered assets are generally those which have been designed to function like natural assets but are new designs not found in nature.*

# What is a Municipal Natural Asset?

Municipal natural assets refer to the stocks of natural resources and/or ecosystems that contribute to the provision of one or more services required for the health, well-being and long-term sustainability of a community and its residents. For example, forests cool urban areas and remove air pollutants, helping us reduce energy consumption and breathe better. Physical municipal assets typically refer to engineered infrastructure such as roads and water treatment plants that provide municipal services, however, natural assets also provide municipal services. As such, a municipal natural asset is similar to other built infrastructure, in the context of municipal asset management.

The scoping flowchart in Figure 3 can assist with identifying if a natural feature or asset meets the definition of a municipal natural asset.

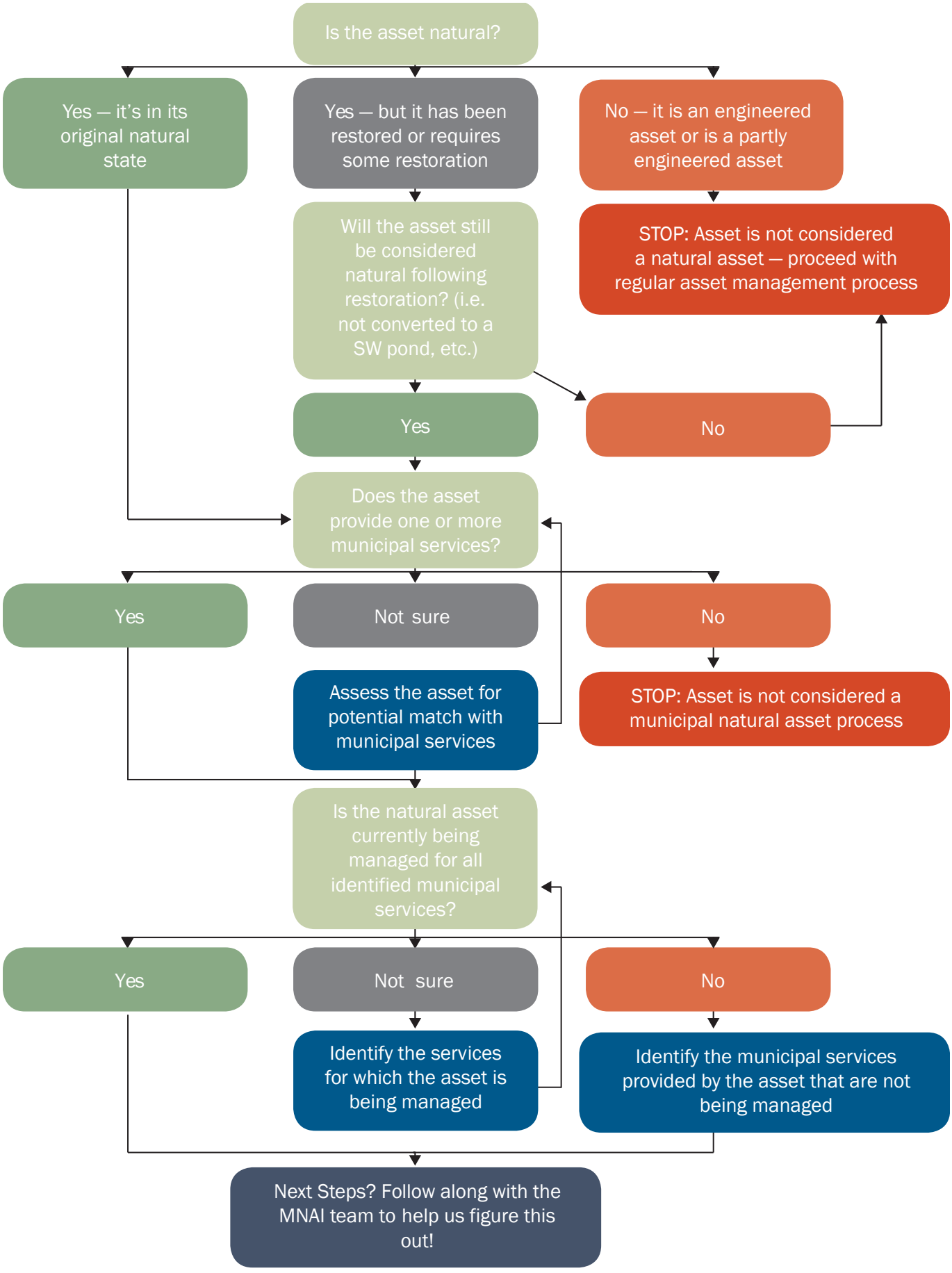



*Figure 3: Municipal Natural Asset Scoping Flowchart*

# Tools to Manage Municipal Natural Assets

Local governments can manage municipal natural assets that provide sustainable municipal services and ensure the protection of their co-benefits in a number of ways including directly through asset management and shared natural asset management, and indirectly through supporting policies, bylaws, plans and guidelines.

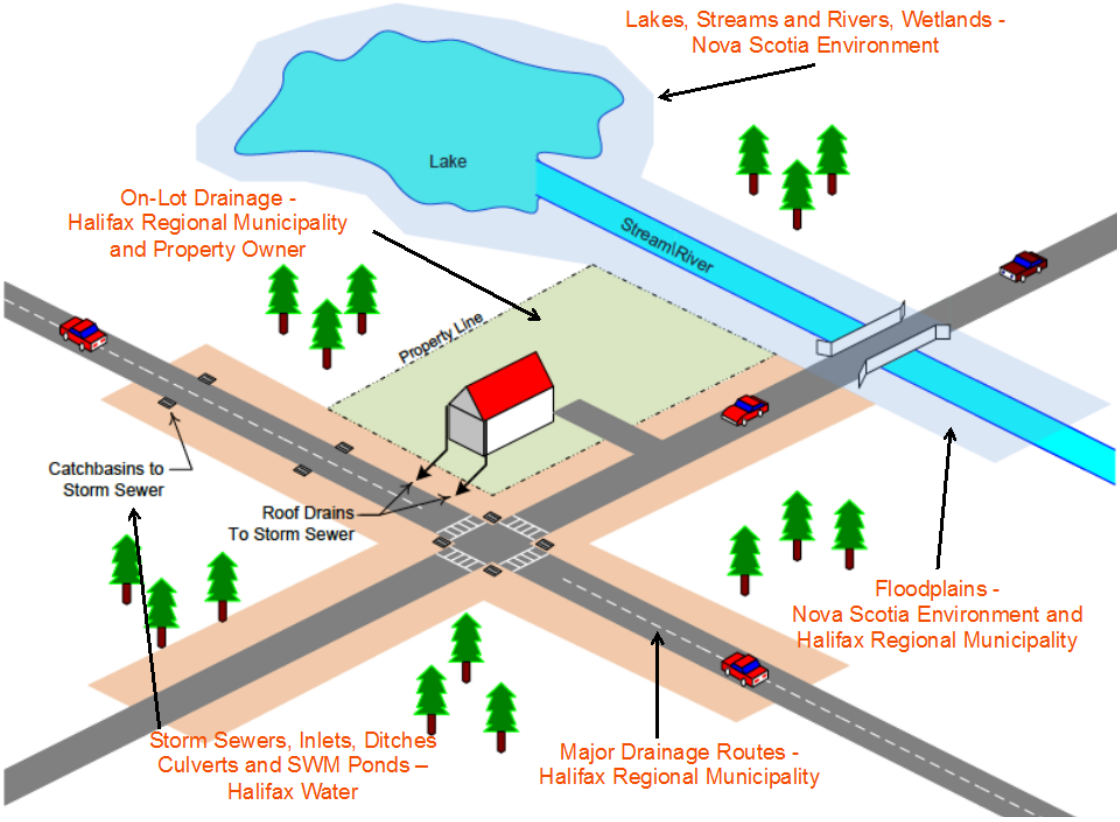
## Direct asset management

Many Canadian municipalities are already being driven to develop asset management strategies by public sector accounting guideline changes, federal Gas Tax grant eligibility criteria, certain provincial legislative requirements and guidelines, and other program support and funding.[10] In 2009, for example, the Public Sector Accounting Board (PSAB) implemented PS 3150 - a new standard requiring municipalities to not only account for tangible capital assets, but also amortize them.[11] The Government of Ontario's Guide for Municipal Asset Management refers to asset management planning as "the process of making the best possible decisions (for) building, operating, maintaining, renewing, replacing and disposing of infrastructure assets to maximize benefits, manage risk and provide satisfactory levels of service to the public in a sustainable manner." [12] Asset Management BC explains it as "an integrated process, bringing together skills, expertise, and activities of people; with information about a community's physical assets; and finances; so that informed decisions that support sustainable service delivery can be made." Despite the traditional focus on built infrastructure, asset management and planning can include natural assets that are owned and managed by municipalities.

*Municipal natural asset managers can view municipal natural assets that provide municipal services through an infrastructure asset management lens, and consider them as municipal assets that would otherwise need to be provided by a municipality, regional government or local government.*

## Shared management of natural assets

Traditional infrastructure is usually located within one jurisdiction. However, natural assets often extend beyond jurisdictional boundaries. As such, their management may require collaboration among municipal departments, private property owners, adjacent municipalities and other orders of government (Figure 4). For instance, a creek can flow through two adjacent municipalities and provide services to each. But if creek management is disjointed – one municipality ensures protection, the other does not - the whole system will be impacted.




Source: Halifax Integrated Resource Plan
https://www.halifax.ca/sites/default/files/documents/home-property/water/HW_IntegratedResourcePaln_Vol1.pdf

*Figure 4: Example depiction of the multiple stakeholders and authorities involved in the management of a single natural resource - water*

# Supporting policies, bylaws, plans & guidelines

Other tools, not specific to asset management, can support and provide further benefits to municipal natural asset management. For example, the City of Guelph created the first Pollination Park in Canada, which provides habitat protection for pollination species such as bees and hummingbirds. The City of Montreal has developed a suite of tools to increase urban diversity through natural asset protection, including: a Municipal Tree Policy; The Greening Strategy; a Strategic Plan for Sustainable Development; and, a Policy to Protect and Enhance Natural Habitats.[13]

# Endnotes

1 A description of broader tools and lessons related to municipal asset management are documented in Town of Gibsons, 2014 and Brooke et al, 2017.

2 Use of the term “local government” or “municipality” in this paper refers to all authorities with municipal responsibilities i.e. local administrations, metropolitan and regional municipalities, First Nation communities, and sectoral organizations.

3 Natural assets refer to natural resources and ecosystems that contribute to provision of one more services required for the health, economic performance and long-term sustainability of a community and its residents.

4 Assets can be defined as the physical infrastructure managed or operated by local governments to enable service delivery including, but not limited to: water and wastewater systems, drainage and flood protection systems, transportation systems, civic facilities, parks and fleets. They also include natural resources (or natural assets) and the essential ecological functioning that nature provides.

5 The concept of natural capital intentionally references the economic notion of financial capital: “The term ‘capital’ has been borrowed from the financial sector to describe the value of the resources and ability of ecosystems to provide flows of goods and services such as water, medicines and food. Flows of goods and services that benefits people are called ‘ecosystem services’. Much as an investor will use financial capital to generate profits, a stock of forest or fish will provide a future flow of timber or food, which if used sustainably will provide long-term benefits to people”. See https://naturalcapital.finance/the-natural-capital-declaration for further details.

6 Source: http://www.eartheconomics.org/science-economics/

7 The United States Environmental Protection Agency states “green infrastructure uses vegetation, soils and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments”.

8 Government of Ontario. 2014. Provincial Policy Statement. Ministry of Municipal Affairs and Housing. https://www.ontario.ca/document/provincial-policy-statement-2014

9 The Government of Canada’s 2016 Budget included a full section on Green Infrastructure, listing a much wider range of infrastructure for clean energy, asset management, and water and wastewater systems.

10 Asset Management BC, 2013.

11 Public Sector Accounting Board, 2009.

12 Government of Ontario. 2016 (updated 2019). Building Together – Guide for municipal asset management plans. https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans#section-2

13 ICLEI Canada, 2010.

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# Convening Partners

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**MNAI wants to thank our funders for the summary paper series**

- Climate Change Adaptation Program of Natural Resources Canada
- Ministry of Municipal Affairs and Housing, Province of British Columbia