



Possibility grows here.



Natural Asset Management

**Advancing Policy Innovation
and Municipal Leadership**

*Prepared by Asset Management Ontario (AMONTario)
on behalf of the Greenbelt Foundation
August 2025*

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The views and opinions expressed in this report are those of the authors only and do not necessarily represent the views of the Greenbelt Foundation, their Officers or Directors. We have done our best to confirm that all facts and figures are accurate. However, we do not retain liability for any errors or misrepresentations.

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Land Acknowledgement

The Greenbelt Foundation acknowledges that the land we meet on and strive to protect is the traditional territory of the Anishinaabe, Haudenosaunee, Huron-Wendat, and is now home to many other diverse First Nations, Métis, and Inuit Peoples.

The area we now call the Greenbelt consists of treaty lands. Such Treaties of Canada include the Niagara Purchase, Between the Lakes Purchase and Collins Purchase, Head of the Lake Treaty, Ajetance Treaty, Toronto Purchase, Gunshot Treaty, Treaty Number 20, Saugeen Treaty, Treaty Number 82, Saugeen Peninsula Treaty, and Lake Simcoe Nottawasaga Treaty. It is important that we learn about the history and continued presence of these treaties because we are all treaty people.

The lakes, rivers, and wetlands, as well as forests, ravines, and healthy farmlands in the Greenbelt have been stewarded and protected by the First Peoples since time immemorial. We are grateful to the First Peoples for their care of the land on Turtle Island, which many of us have come to call home. We respect and are inspired by the deep connection of kinship that Indigenous Peoples have with the land.

We acknowledge and condemn events such as Indian Residential Schools, Indian Day Schools, the Sixties Scoop, Missing and Murdered Indigenous Women, and many other violent acts committed since European settlers arrived on this land. The vibrant way of life of Indigenous Peoples and their connection to the land has been suppressed due to attempted genocide, colonialization, and assimilation. We acknowledge the truth of these events, continuing effects, and the enduring rights of Indigenous Peoples. We recognize that the Greenbelt is based on a land management plan developed by settlers, and we as a Foundation have a responsibility to ensure the work we do reflects the continued efforts and rights of the First Peoples of this land. As a Foundation, we will continue to support projects that prioritize reconciliation, such as projects that increase awareness of the presence of Indigenous Peoples and their territories; projects that build meaningful relations with Indigenous Peoples to conserve and restore nature in the region; projects that we collaborate with Indigenous Peoples and Communities to improve communications with municipalities in landuse planning.

We will continue to look for ways to align our mandate with the Calls to Action from the Truth and Reconciliation Commission. As we continue to work towards our vision of a protected, prosperous Greenbelt for all, we will seek opportunities to listen to and learn from Indigenous leaders and elders. We will support Indigenous-led initiatives that advance education, understanding, and reconciliation. We will further educate ourselves on Indigenous Knowledge Systems that can inform and support our mandate to sustain the air, lands and waterways in the Greenbelt.

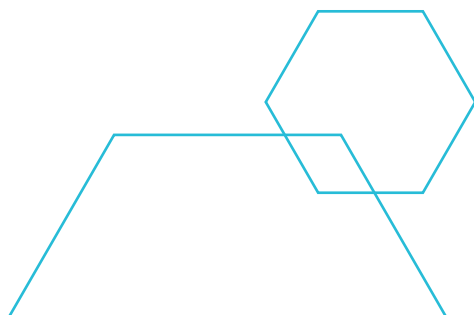
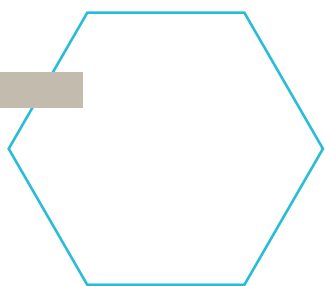




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Championing Nature

Ontario Communities are building Better with Nature

Municipalities are facing a range of significant challenges, including increasing climate risks, aging infrastructure, and limited budgets. Natural assets, such as forests, wetlands, and rivers help address these challenges by providing a wide range of important services. These services include stormwater management, flood mitigation, water filtration, temperature moderation, and recreational opportunities. Natural assets are also vital for building resilient communities and sustaining healthy ecosystems. As the impacts of climate change and urbanization intensify, the need to protect and restore natural assets grows, which highlights the importance of natural asset management (NAM) as a strategic solution to addressing these challenges.

Natural Asset Management (NAM): The practice of identifying, valuing and managing natural assets to provide critical municipal services.

Recognizing, maintaining and enhancing natural assets provides multiple benefits:

- Natural Assets can be more cost effective than traditional grey infrastructure and provide the same level of service
- Nature is more resilient and flexible in providing various levels of services
- Replacing existing services provided by nature increase municipal service costs

Achieving progress on NAM hinges on strong and informed leadership at the municipal level. Mayors, Councils and senior staff play a critical role in shaping priorities and driving change. Providing policy direction, steering strategic and departmental plans and budget decisions, requesting reports and asking questions that champion natural assets as essential infrastructure is needed. This report provides municipal councils with practical actions to advance NAM within their communities by focusing on improving the visibility and integration of natural assets in existing municipal asset management planning, decision-making and budgeting.

Council Actions

This report provides municipal councils with practical actions to advance NAM within their communities and to integrate it into decision-making and budgeting. It highlights:

- Four Key Council Actions for Municipal Councillors to Champion Natural Asset Management
- Additional Council actions to recognize and integrate natural assets and ecosystem service valuations in strategic priorities, traditional asset management plans, and other municipal plans, policies and bylaws.

Natural Asset Types, Approaches and Policies

The practice of NAM closely parallels processes already used for built assets and enable municipalities to capture the multiple services provided by individual asset types. This report encourages municipalities to embrace two fundamental approaches to championing NAM. Recommended council actions are accompanied by an explanation of community benefits, links to expert resources and local examples of successful implementation.

The Ontario Climate Change Impact Assessment Report (2023) identifies flooding as both a high risk and the most costly natural hazard in Ontario, highlighting the role of nature in climate adaptation. The actions outlined in this report can help your community build greater resilience and long-term cost savings.



Forests

provide recreation and carbon storage



Rivers

provide waterflow (stormwater management)



Wetlands

provide water filtration and erosion control

Natural Assets

Natural assets are preserved, restored, or enhanced natural resources and ecosystems that provide ongoing benefits to people.

They include:

- Forests
- Wetlands
- Meadows
- Prairies (Grasslands)
- Riparian Areas
- Streams, rivers, and creeks
- Lakes
- Beaches
- Bluffs
- Parks
- Street trees
- Park trees
- Soils
- Aquifers
- Coastal Shorelines

NAM is the practice of identifying, valuing, and managing natural assets to provide critical municipal services. Two fundamental approaches drive the advancement of NAM:

1. Integrating natural assets into traditional asset management planning.

This approach treats natural assets as a core component of municipal infrastructure, alongside roads, bridges, and water systems. By including forests, wetlands, and other natural resources in asset management planning, municipalities can balance the services, costs, and risks of these assets, and plan for their protection, maintenance, and restoration ensuring they continue to provide critical benefits to their community.

2. Embedding natural assets (and ecosystem services) into other municipal policies, plans, and bylaws.

Beyond asset management, natural assets can be integrated into broader municipal activities at a variety of scales, such as official plans, climate action strategies, development guidelines, and tree protection bylaws. By doing so, municipalities can help increase the profile of natural assets in land-use decisions, budget processes, and regulatory measures. This approach advances NAM by creating a supportive policy environment that enhances the protection and restoration of natural systems.

Asset management is the coordinated activity of an organization to realize value from assets (ISO 55000).



Photo: Shutterstock

This report is organized into four sections, focused on different types of recommendations:

Core

Overarching actions that are fundamental to prioritizing the integration of natural assets into municipal decision making.

Asset Management

Actions focused on integrating natural assets into traditional asset management.

Other Plans, Policies, and Bylaws

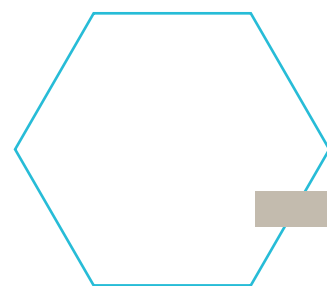
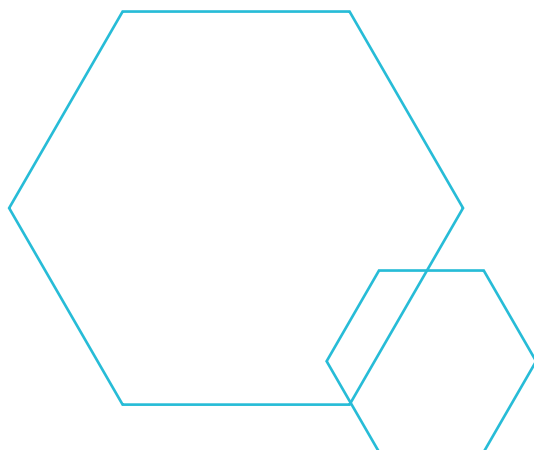
Actions for integrating natural assets into other municipal plans, policies, and bylaws, including land use planning, budgeting, master plans, and other policies.

Crosscutting

Actions that aim to help create stronger connections between NAM approaches.

Each action outlined in the report is presented as follows:

- Council Action: what council members can do to support NAM.
- Rationale: an explanation of the reason behind the actions and the underlying factors that support it.
- Examples: highlighting how or where this type of action has been successfully implemented.



4 Key Actions for Municipal Councils to Champion Natural Asset Management

1. During relevant plan presentations, ask staff how natural assets have been considered and incorporated.

Relevant plans include, but are not limited to:

- Strategic Plan
- Official Plan
- Secondary Plans
- Asset Management Plans
- Stormwater Master Plan
- Park Master Plan
- Transportation Master Plan
- Climate Action Plans
- Watershed Plans
- Biodiversity Action Plan
- Active Transportation Plan
- Land Acquisition Strategy
- Housing Plans
- Water Supply Master Plan

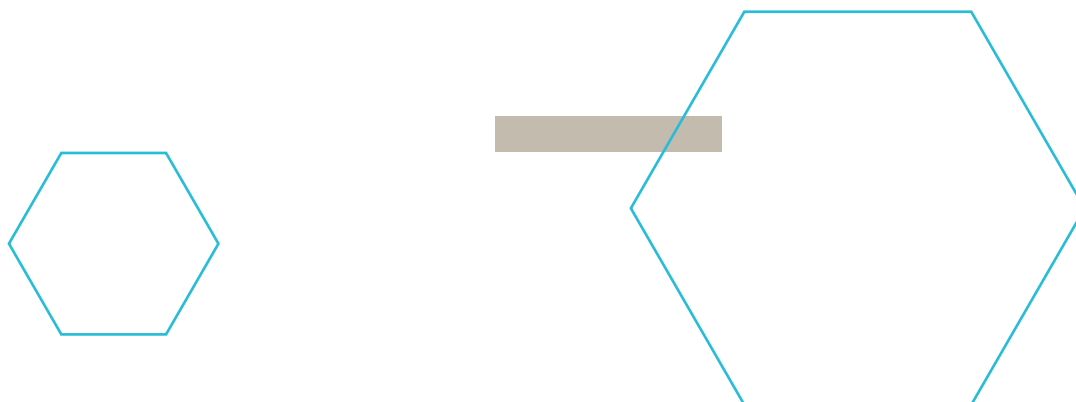
- Natural assets should be consistently included in plans, strategies, and presentations to council to reinforce their importance.
- Repeatedly highlighting the benefits of natural assets builds understanding and engagement among council and staff, while frequent inclusion raises their visibility and ensures they become a regular priority in decision-making.

For more detail, See Council Action 2 on page 20.

2. Direct staff to include natural assets in any updates to the corporate Asset Management Policy.

- This policy sets the strategic direction for managing all assets.
- Including natural assets helps establish their place in long-term maintenance, planning, and investment decisions, preventing them from being overlooked.

For more detail, See Council Action 5 on page 25.





3. Request to participate in asset management committees, workshops, and training sessions, including those focused on natural assets.

- As a councillor, strengthening your understanding of asset management is crucial for making informed decisions. To learn more, consider joining asset management committees and seeking education on the importance of natural assets.
- Deepening asset management and natural asset knowledge will help ensure decisions reflect a holistic view of all assets, promote consistency in decision-making, and help align priorities across departments.

For more detail, See Council Action 7 on page 28.

4. Through the budget process, ask staff if they are investing the right amount in the management of natural assets.

- Integrating clear budget needs for the protection, maintenance, and restoration of natural assets into the municipal budget process helps prioritize them alongside other infrastructure.
- Dedicated budgeting improves transparency, accountability, and management, while asset management processes like condition assessments, lifecycle costs, and prioritization can help guide informed budgeting decisions.

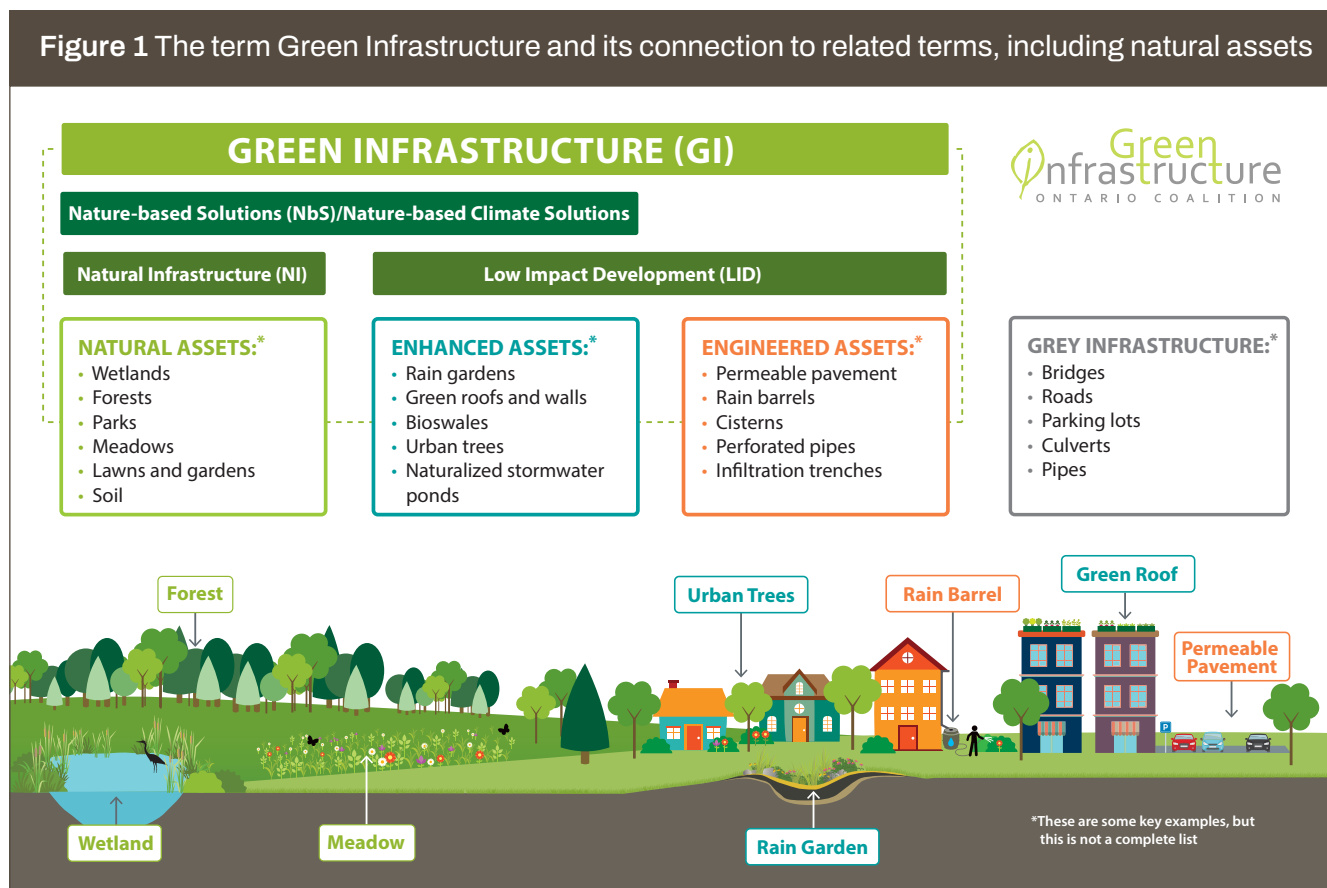
For more detail, See Council Action 18 on page 44.

Photo: TRCA

Ontario Context

Ontario regulations support the use of green infrastructure, which includes natural assets, in municipal asset management plans across the province, while professional norms and standards have been developed and made accessible. Ontario was also the first senior government in Canada to adopt an official definition of green infrastructure, an umbrella term which includes natural assets as well as enhanced and engineered assets that integrate natural elements or mimic natural processes (Figure 1).

Figure 1 The term Green Infrastructure and its connection to related terms, including natural assets



Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure (O.Reg. 588/17) provides a framework for asset management planning that includes opportunities to integrate natural assets. Many municipalities in Ontario are recognizing natural assets as essential components of their asset portfolios, capable of mitigating climate risks, providing important services, and reducing infrastructure costs. Aligning NAM with the provincial regulation and aiming to restore and protect areas across the province can enhance community resilience and support a sustainable, climate-resilient future for Ontario.

Source: Green Infrastructure Ontario Coalition

The Ontario Greenbelt, established in 2005, is one of the most prominent examples of natural asset protection in the province and highlights the contributions of near urban nature to surrounding communities. Covering over 2 million acres, it safeguards natural and agricultural systems that include ecosystems such as forests, wetlands, rivers, and agricultural soils. Located in the Greater Golden Horseshoe region of southern Ontario, the Greenbelt – which includes the Niagara Escarpment, Oak Ridges Moraine and Protected Countryside – provides \$3.2 billion in ecosystem services annually to over 100 urban and rural communities including clean drinking water, clean air, water storage and flood mitigation, reduction of urban heat island effects, carbon sequestration, and outdoor recreation.

Communities of all sizes in the Greenbelt and across Ontario are taking action to recognize their natural assets, and understand the full range of services that they provide. Many are now advancing NAM policies and plans within their municipalities:

- In the Town of Pelham, Niagara Region municipal council and residents understand that local forests and wetlands contribute over \$585 million annually in stormwater management and flood control services. Stormwater management services provided by local wetlands are ten times more costly to replace than forests and the ‘catastrophic’ removal of these natural assets would increase peak flow rates during 100-year storm events by 486% in some areas (six times the current flow rate), likely resulting in significant flooding and damage that would be difficult to replicate with traditional infrastructure.
- In a study of Grindstone Creek, the Cities of Hamilton and Burlington estimated that natural assets providing stormwater services represent a value of **\$2 billion** – the equivalent capital cost of replacing those services with engineered infrastructure.
- In York Region, a case study of extreme heat predictions in two neighbourhoods found that greenery cover can protect people from heat stress and provide cooling benefits, leading to a reduction in heat related illness and mortalities. Further, mitigating exposure to extreme heat results in direct economic benefits attributed to reduced use of health system services, lower energy use, and increased worker productivity.

Additional examples of how municipalities are recognizing natural assets and advancing NAM processes are included throughout the report.

Partnerships and Support

In Ontario, Conservation Authorities (CAs) play a crucial role in the management and protection of natural assets, including natural heritage systems. These systems are vital for identifying critical areas that require protection and restoration based on ecological factors, contributing to the preservation of biodiversity, water quality, and other essential environmental services. Municipalities and CAs have been advocating for the protection of natural heritage systems for decades. By incorporating lessons learned from these efforts, NAM can build on existing policies to achieve even greater success in safeguarding these valuable assets.

Natural asset management complements these efforts by recognizing ecosystems as integral parts of municipal infrastructure, on par with roads, water pipes, and other essential community assets. By leveraging the expertise of CAs and aligning with provincial and municipal priorities, municipalities can foster a more integrated approach to infrastructure planning that values the full range of ecosystem services provided by natural assets. This holistic approach builds upon Ontario's strong history in natural heritage planning, encouraging long-term stewardship and builds stronger, more resilient communities.

Natural heritage features and areas include significant wetlands, significant coastal wetlands, other coastal wetlands, fish habitat, significant woodlands and significant valleylands, habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area (PPS 2024).



Council Actions Summary

Council Actions	More Details	Related Recommendations
Core		
1. Direct staff to include natural assets as a priority in the corporate Strategic Plan and any future updates.	Pg. 19	2
2. Request natural assets be incorporated into all relevant plans and strategies.	Pg. 20	1, 3, 11, 15, 22
3. In council reports and presentations on relevant plans, ask staff to highlight how natural assets have been considered and incorporated.	Pg. 21	2, 22
4. Request staff use consistent definitions and terminology when including natural assets in presentations or reports to council.	Pg. 22	
Asset Management		
5. Direct staff to include natural assets in any updates to the corporate Asset Management Policy.	Pg. 25	
6. Ask that asset management and environment staff work together to undertake a natural assets inventory and direct them to consider working with their local Conservation Authorities, as appropriate.	Pg. 26	21
7. Request to participate in asset management committees, workshops, and training sessions, including those focused on natural assets.	Pg. 28	
8. Request a staff report on the municipality's commitments to natural assets outlined in the municipality's most recent asset management plan(s). If such commitments exist, request annual updates on progress towards fulfilling them.	Pg. 29	
9. Request a report on the maintenance and operations costs of natural assets and ask how these costs are reflected in asset management reporting.	Pg. 30	18
10. Direct staff to define the role of each asset management document. This can be done in the Asset Management Policy.	Pg. 31	

Council Actions	More Details	Related Recommendations
Other Plans, Policies, and Bylaws		
11. Approve and defend Official Plan updates related to natural assets.	Pg. 35	2
12. When zoning bylaws are updated, request an overview of how Official Plan policies that support natural asset management have been integrated into the updates.	Pg. 37	13, 14
13. Ask staff whether any existing bylaws and/or standards can be leveraged to include protection or enhancement of natural assets.	Pg. 38	12, 14
14. Direct staff to conduct a review of existing municipal bylaws in neighbouring jurisdictions and identify gaps where new natural asset-specific bylaws could strengthen protections.	Pg. 39	12, 13
15. Direct staff to use watershed planning to identify priority natural assets for protection and restoration (on private and public land), and suggest they collaborate with relevant Conservation Authorities (where available).	Pg. 40	2
16. Direct staff to ensure collaboration between the parks and stormwater management departments to consider how stormwater management is integrated into parkland acquisition proposals brought forward to council.	Pg. 41	
17. When presented with a municipal “climate change lens” framework, ask staff to outline how natural asset and biodiversity considerations have been integrated.	Pg. 42	20

Council Actions	More Details	Related Recommendations
Crosscutting		
<p>18. Through the budget process, ask staff whether current investments in natural asset management are sufficient.</p> <p>When presented a business case analysis with respect to an infrastructure decision, ask how ecosystem services have been considered in the analysis.</p>	Pg. 44	4, 11
<p>19. Request a staff report to council on whether a reserve fund has been set up that explicitly includes or enables funding for natural assets.</p>	Pg. 45	1, 3
<p>20. When an asset management plan is presented, ask how climate risk was incorporated.</p>	Pg. 46	17
<p>21. When any plan that includes natural assets is presented to council, ask staff if they have requested the raw data associated with the plan.</p>	Pg. 47	6
<p>22. When master plans are presented, ask how their priority actions are reflected in the corporate asset management plan.</p>	Pg. 48	2
<p>23. Request and approve natural asset projects within federal and provincial infrastructure funding submissions.</p>	Pg. 49	
<p>24. Request a report from staff outlining their invasive species management approaches and costs.</p>	Pg. 50	

Core Recommendations

This section presents core council actions that establish the protection and enhancement of community services provided by nature as a strategic priority. These are overarching steps to increase the integration of natural assets into municipal decision-making.



Council Action 1

Direct staff to include natural assets as a priority in the corporate Strategic Plan and any future updates.

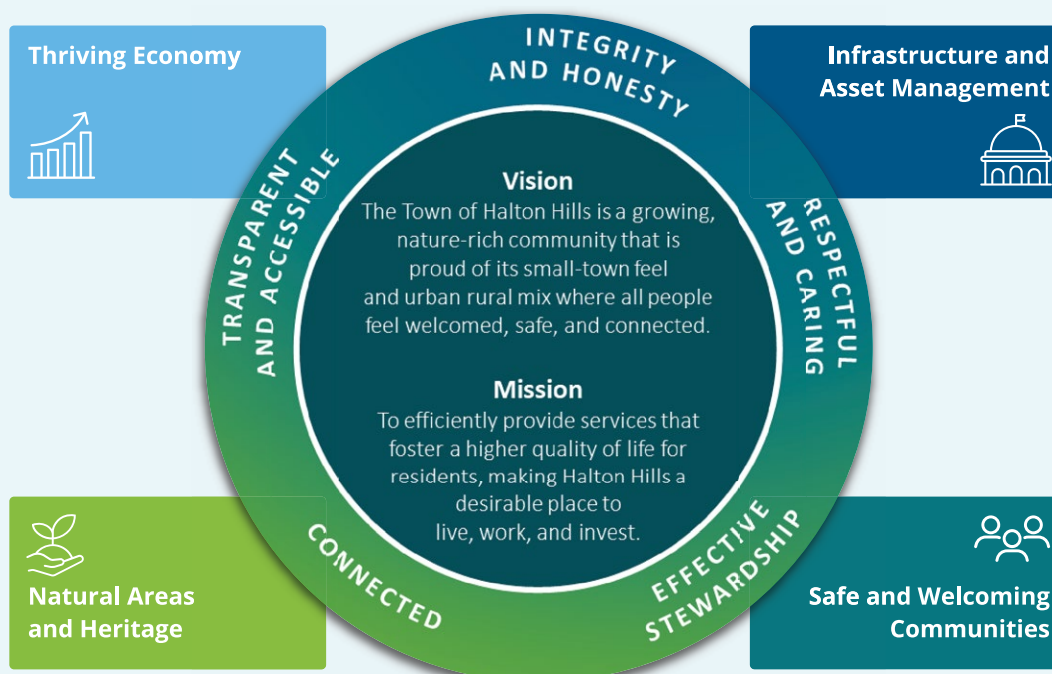
Rationale

- **Strategic Vision Alignment:** The corporate Strategic Plan sets the overarching vision and priorities for a municipality, serving as a guide for all other work. By explicitly recognizing the importance of natural assets here, councils reinforce their critical value and importance at the highest level of municipal decision-making.
- **Foundation for NAM:** Acknowledging natural assets in the corporate Strategic Plan builds the foundation for integrating these assets into broader asset management practices and other relevant plans and policies.
- **Support for Emerging Initiatives:** This action is relevant for all municipalities, but in particular can signal council support in municipalities who have not yet started any natural asset management.

Example

In Halton Hills, progress toward NAM is significantly supported by their Strategic Plan. The Plan includes two NAM related strategic priorities: “Infrastructure and Asset Management” and “Natural Areas and Heritage” (Figure 2). These priorities have helped make the case to council for funding and support for natural asset projects, and the current development of their green infrastructure asset management plan, which integrates natural assets.

Figure 2 Town of Halton Hill Strategic Priorities



Council Action 2

Request natural assets be incorporated into all relevant plans and strategies, including:

- Official Plan
- Secondary Plans
- Asset Management Plans
- Stormwater Master Plan
- Park Master Plan
- Natural Heritage Plan
- Transportation Master Plan
- Water Supply Master Plan
- Climate Action Plans
- Watershed Plans
- Biodiversity Action Plan
- Active Transportation Plan
- Land Acquisition Strategy
- Housing Plans

Rationale

- **Relevance to Many Municipal Priorities:** Natural assets provide multiple services and support various municipal priorities, including climate resilience, biodiversity, stormwater management, and community health. Integrating them across plans ensures their contributions are recognized holistically, reducing reliance on a single document to champion their importance.
- **Visibility:** Including natural assets in all relevant plans helps them receive consistent attention and become a part of regular business and decision-making.
- **Strategic and Operational Decisions:** Consistent inclusion of natural assets across plans ensures they have clear line of sight within municipal priorities, which is useful for guiding strategic and operational decisions. It also helps prioritize investments, align departmental goals, and maximize the benefits natural assets deliver to communities.

Examples

Mississauga Stormwater Plan considers natural assets like wetlands and green spaces for their contribute to managing stormwater runoff. This plan also includes understanding natural systems as a step under one of its four core themes.

Guelph Water Supply Master Plan include their aquifers as central to ensuring clean and reliable drinking water. The plan characterized the City's groundwater resources and mapped their relationship with the natural environment.

St. Catharine's Climate Adaptation Plan includes natural environmental conservation as a key climate change adaptation strategy, linking specific actions to their Urban Forestry Management Plan.

Lake Simcoe Conservation Authority Land Securement Project provides direction for the Conservation Authority to strategically secure land to protect natural heritage features, improve biodiversity and help support provincial and federal climate change initiatives.

Council Action 3

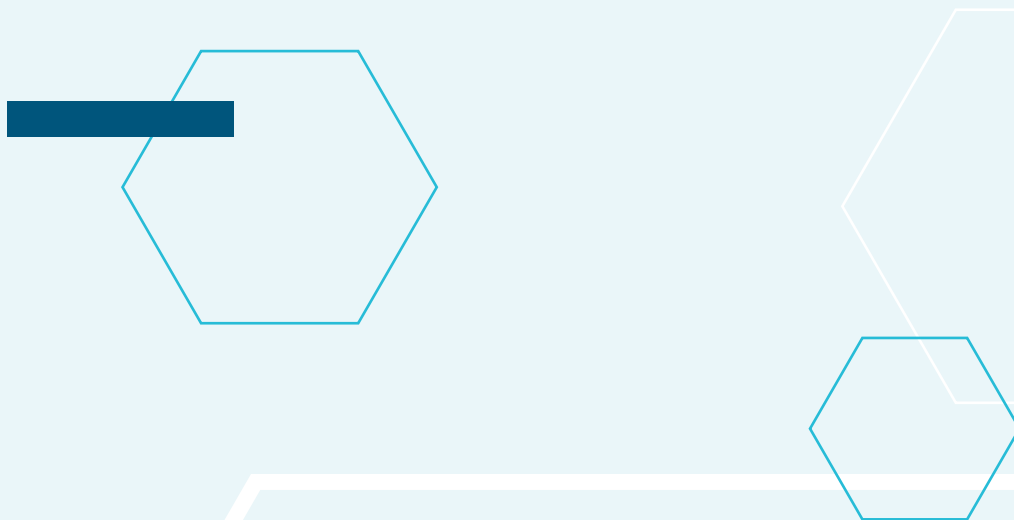
In council reports and presentations on relevant plans, ask staff to highlight how natural assets have been considered and incorporated.

Rationale

- **Repetition Builds Understanding and Engagement:** Consistently highlighting how natural assets are incorporated into various plans helps to reinforce their importance, promoting a deeper understanding and stronger engagement from both council and staff. The more frequently the benefits and roles of natural assets are communicated, the more embedded these assets become in decision-making processes.
- **Becoming Business as Usual:** Including natural assets in more plans ensures they are regularly discussed. Over time, they will become an integral part of the municipality's ongoing business, rather than a one-off consideration.

Example

At a Thunder Bay town hall meeting, the inclusion of trees in the City's Asset Management Plan was questioned by a member of the public. Thanks to years of staff presentations, a councillor was confidently able to explain how trees provide essential services such as stormwater management and urban cooling, and that they require proactive management. This confident response demonstrated how consistent communication can empower councillors to champion natural assets effectively.



Council Action 4

Request staff use consistent definitions and terminology when including natural assets in presentations or reports to council.

Rationale

- **Natural Asset Categories and Types:** While diverse terminology is acceptable (e.g., urban forest, natural heritage, greenspace), municipalities should explicitly define what is included under each category. Consistent definitions across internal departments will reduce confusion, enhance communication, and improve effective allocation of resources.
- **Alignment with Provincial Regulation:** Clear definitions can link natural asset terminology to “green infrastructure,” as this is the term used in Ontario’s asset management regulation (O.Reg. 588/17) and the Provincial Planning Statement (PPS, 2024). Aligning with this terminology can help streamline compliance and support for NAM.

O.Reg. 588/17 Green Infrastructure Definition

A “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.

- **Natural Asset Management (NAM):** The practice of identifying, valuing and managing natural assets to provide critical municipal services.



Council Action 4

Continued from previous page

Example

Below is a comparison of different natural asset terminology used by municipalities:

St. Catharines Asset Management Plan

Service Function	Asset Category	Assets and Components Included
Natural Assets	Coastal	Protected and unprotected shorelines
	Forestry	Forested areas, city and park trees
	Horticulture	Beds, planters, beehives
	Natural Waterbodies	Water courses, ponds, lakes, and wetlands

City of Mississauga Asset Management Plan

Asset Category	Asset Types
Trees	Street Trees
	Park Trees
	Trees in Amended Boulevard Treatments
Boulevard Landscapes	Boulevard Grass
	Horticulture Features
	Seasonal Planters
	Amended Boulevard Treatment Areas
Natural Areas	Forested
	Non-forested

Asset Management Recommendations

This section presents actions to integrate natural assets into municipal asset management plans, ensuring these assets are recognized and managed alongside built infrastructure.

The following actions provide a path for integrating natural assets into asset management that follows the same core activities (Figure 3), processes, and decision-making used to manage and fund built infrastructure.

Figure 3 Core Activities of Asset Management



Source: Asset Management Ontario

Council Action 5

Direct staff to include natural assets in any updates to the corporate Asset Management Policy.

Rationale

- **Policy as Foundation:** A municipality's Asset Management Policy sets the strategic direction and principles for managing assets, while their asset management plan(s) provide detailed, actionable steps to implement those policies, ensuring the effective management, maintenance, and investment. It is important for natural assets to be included in the policy to support their inclusion in the plan(s).

Example

The City of Waterloo included natural assets in their recent Strategic Asset Management Policy update, stating:

“This policy applies to all members of the City’s organization and all infrastructure assets or asset systems, including **natural assets** owned and operated by the City and used to deliver services to the community.”

Similarly, the City of Orillia included green infrastructure in their Strategic Asset Management Policy. In the Scope section, stating:

“The City recognizes the importance of **Green Infrastructure** Assets and will include these in its inventories and Asset Management System.”

Council Action 6

Ask that asset management and environment staff work together to undertake a natural assets inventory and direct them to consider working with their local Conservation Authorities, as appropriate.

Rationale

- **Inventory is the First Step:** Creating a natural asset inventory is the first step in incorporating natural assets into municipal asset management plans. Inventories map and produce a registry of natural assets identifying the location, condition, and risk of the asset. This information enables staff to identify corresponding services and service levels, for each asset and make informed decisions about their protection, restoration, and management.
- **Start the Process:** Inventories can be initiated by using existing data to identify natural assets within the municipality's jurisdiction.
- **Focus on Municipal Public Land:** A basic inventory of all natural assets on municipal property lays the groundwork for their inclusion in asset management processes. Public land includes municipal properties, rights of way, and easements.
- **Conservation Authorities:** Conservation Authorities are important partners in identifying natural assets and documenting their services. They are experts at identifying and managing natural assets with a watershed-based, ecosystem approach which is important in understating the benefits/services provided by nature.
- **Build and Expand the Inventory Over Time:** Natural asset inventories and resulting registries can progress over time and enhance asset management plans and strategies as more data is available. For example, while parkland may be well mapped, other natural assets, such as ravines and natural assets on other municipal lands, may be under documented.

Examples

In the City of Hamilton, a councillor proposed a motion for staff to work in collaboration with their local Conservation Authorities to conduct a comprehensive natural asset inventory, aimed at identifying and documenting the municipality's natural assets and environmentally significant areas.

There are useful examples and guidance on completing a natural asset inventory in the "[Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans](#)" guide.



Why only natural assets on public land in asset management?

Natural assets extend beyond public property, they are part of a connected, interdependent system. Removing or disrupting even a small part of this system can have cascading effects, reducing their ability to provide services or other benefits. Traditional asset management does not integrate private land into its decision-making, as it focuses on assets controlled by the municipality to ensure sustainable service delivery. It is important for municipalities to focus on their own natural assets within asset management to maintain consistency with other asset categories, and ensure they are managing their own natural assets effectively.

This limitation also presents an opportunity, because it highlights the need for complimentary plans, policies, and bylaws to support and strengthen natural asset management efforts. Asset management planning alone cannot address every challenge facing natural areas, but when paired with supportive planning, policies and bylaws, that include private land initiatives, it can play a powerful role in protecting and enhancing our natural assets.

Council Action 7

Request to participate in asset management committees, workshops, and training sessions, including those focused on natural assets.

Rationale

- **Importance of Education:** Strengthening council and senior staff education on the role of asset management is essential for supporting sustainable, cost-effective infrastructure and service delivery. This education includes understanding the full lifecycle costs and services provided by infrastructure and enabling better investment decisions.
- **Supporting Alignment:** Strengthening council and senior staff education on asset management also promotes consistency in decision-making, helping to align priorities across departments.

Examples

As asset management is a relatively new and complex undertaking, the following initiatives can help decisions be based on comprehensive, consistent understanding of built and natural assets:

- Invite councillors to sit on asset management committees and attend workshops.
- Provide councillors with interactive dashboards, internal asset management webpages, or StoryMaps on asset information and plan details.
- Provide asset management specific onboarding and orientation for new council members.

For example:

1. City of London councillors can participate in the municipality's asset management governance workshops, including natural assets workshops, and foster a deeper understanding of the importance of natural assets, enabling councillors to effectively advocate for their inclusion and prioritization with the broader council.
2. Asset management staff at the City of Waterloo have facilitated orientations, training sessions, and workshops to engage council and senior leadership with asset management concepts during times when they are not required to make critical decisions. This approach allows leaders and decision-makers to ask questions, deepen their understanding of the objectives of Waterloo's asset management program, and learn how to leverage this knowledge to make informed decisions.
3. St. Catharines staff have hosted small workshops with just two councillors at a time. This approach provided a comfortable setting where participants felt free to ask any questions and thoroughly explore the concepts and tools of asset management in a way that was personally meaningful to them. Staff leading the workshops brought relevant tools and data to facilitate learning and encouraged councillors to actively engage with the datasets, enhancing their understanding of asset management through hands-on experience.

Council Action 8

Request a staff report on the municipality's commitments to natural assets outlined in the municipality's most recent asset management plan(s). If such commitments exist, request annual updates on progress towards fulfilling them.

Rationale

- **Fulfill Commitments:** Many asset management plans, as of the July 2024 deadline, now include natural assets or commitments to incorporate them. These commitments, ranging from brief acknowledgements to comprehensive frameworks, align with O. Reg. 588/17. Progress on these commitments is essential to ensure that natural assets are valued alongside traditional assets in decision-making.
- **Annual Reporting:** Reporting on progress towards incorporating natural assets should be completed as part of O. Reg. 588/17's annual review requirement (Figure 4). This will help increase accountability and provide a clear measure of the municipality's progress.

Figure 4 O.Reg 588/17 Annual Review Requirements

Annual review of asset management planning progress

9. (1) Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.
- (2) The annual review must address,
 - (a) the municipality's progress in implementing its asset management plan;
 - (b) any factor impeding the municipality's ability to implement its asset management plan; and
 - (c) a strategy to address the factors described in clause (b).

Example

The City of Ottawa has established a solid framework for integrating natural assets into their overall asset management process. Their [Greenspace and Forest Services Asset Management Plan](#) includes placeholders for various natural asset types. This proactive measure ensures that these assets are acknowledged within the city's asset management planning processes, even if complete data is not yet available. The next step will involve filling in the information gaps by conducting condition assessments and valuations for each natural asset type.

Council Action 9

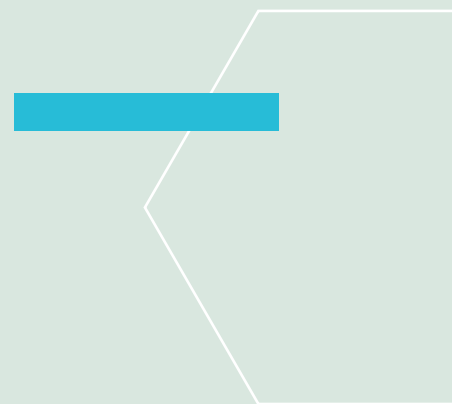
Request a report on the maintenance and operations costs of natural assets and ask how these costs are reflected in asset management reporting.

Rationale

- **Transparent Maintenance and Operations Costs:** Natural assets incur maintenance and operations costs like traditional assets do; these costs can be linked to activities such as invasive species management, erosion control, and reforestation efforts. Ensure these costs are reflected in the annual budget process.
- **Sustainable Service Delivery:** It is important to emphasize that asset management is not only about the asset's value but also about ensuring the sustainable management of these assets to maintain their ongoing services while managing risk.
- **Improved Budget Planning:** Asset management facilitates long-term financial planning by identifying and quantifying the maintenance and operations costs of assets. Asset management can help develop a clear understanding of the costs associated with maintaining assets over time and understanding risk for each asset. Clear reporting of the costs of managing natural assets within asset management systems provides transparency and accountability, supporting informed decision-making.

Example

Staff at the Town of Halton Hills have positioned their initial green infrastructure/natural asset management work as a practical tool to assess existing efforts and determine the costs required to sustain these services, without necessitating significant new spending. This approach has been helpful in demonstrating to decision-makers that maintaining and enhancing natural assets can be achieved within the existing budget framework, fostering long-term support without the immediate need for large financial investments.



Council Action 10

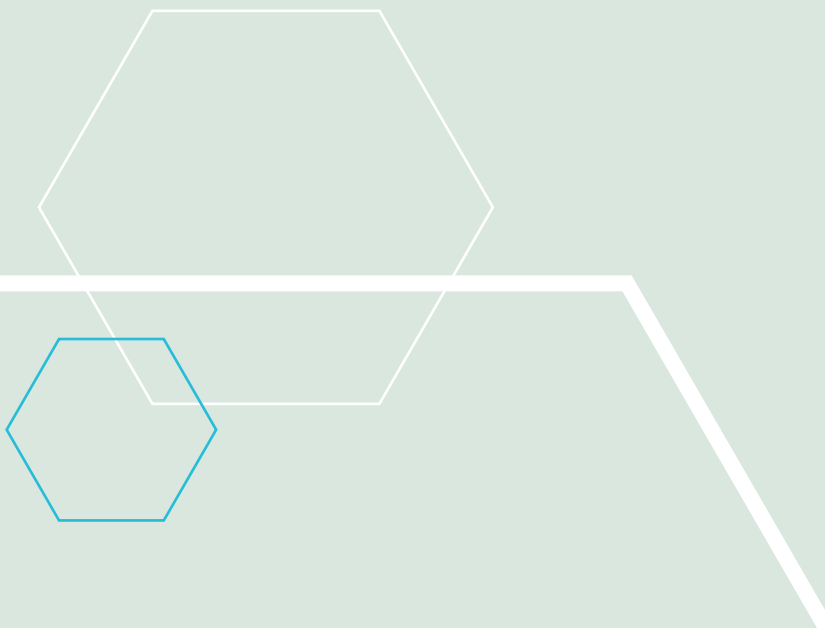
Direct staff to define the role of each asset management document. This can be done in the Asset Management Policy.

Rationale

- **Document Types:** Municipalities often use various asset management documents, including an asset management policy, strategic asset management plan, corporate asset management plans, detailed asset management plans, and methodology guidelines. Clearly defining and distinguishing the role of each document improves clarity and consistency in how assets are considered across different levels of asset management.
- **Important for Natural Assets:** Clear roles for each document is very important if a separate natural asset management plan is developed, because there is a need to articulate how the plan connects to and roles up into other corporate asset management documents.
- **Improve Line of Sight:** Clear definitions for each document will also help avoid repetition, duplication of efforts, and encourage engagement with, and use of, documents (rather than static, once-and-done reports). Including these definitions in the Asset Management Policy will help maintain strategic line of sight, and build familiarity with these documents amongst council members and senior leadership.

Line of Sight

The clear connection between an organization's strategic plan and the daily, on-the-ground activities of individual departments. Line of sight ensures alignment between the organization's top-down aspirations and the bottom-up realities and opportunities of its assets and work environment. (The Institute of Asset Management)



Example

The City of Guelph included a graphic and description of all asset management related documents in their Asset Management Policy (see Figure 5).

Figure 5 Key Documents in Guelph's Asset Management System



Recommendations for Other Plans, Policies and Bylaws

This section presents actions for integrating natural asset management and ecosystem service valuations into other municipal plans, policies, and bylaws. These actions enhance community resilience while supporting multiple municipal goals that are often siloed or in conflict, such as housing and growth management, environmental sustainability, climate change mitigation, public health, and the well-being of vulnerable communities. The ultimate goal of these actions is to elevate the profile of natural assets and support informed decision-making within the planning process.

Natural Asset Management (NAM) extends beyond the protection of significant wetlands and woodlands to encompass all natural features that provide services to communities. These assets support the resilience of traditional infrastructure and enhance overall human and environmental health. Figure 6 outlines the core steps in Ontario's municipal planning process.

It is essential for municipal leaders to champion the integration of NAM at all levels of planning. However, decisions regarding the protection and enhancement of natural assets are most critical at the Secondary Plan and zoning bylaw stages. At this juncture, municipalities can make lasting, impactful decisions on land use and conservation. These are the pivotal moments when lasting, transformative decisions are made. Waiting until the site plan or development review stage often leaves too little room to ensure meaningful protection of natural assets beyond regulated requirements.



Figure 6 Ontario Municipal Planning Hierarchy

Planning Act

Regulation that establishes the responsibility of municipalities to regulate land use.

Provincial Planning Statement (PPS)

Sets the foundation for landuse planning, providing policy direction on matters of provincial interest.

Provincial Plans (e.g., Greenbelt Plan, Niagara Escarpment Plan)

Plans that apply to specific regions and provide more detailed policy direction.

Official Plan

Each municipality is required to have an Official Plan. It is a high level, long term document that guides land use and growth in the municipalities. It must align with the provincial PPS and policies.

Master Plans and Watershed Plans
Inform broad scale municipal planning processes

Secondary Plan or Official Plan Amendment

These plans provide specific schedules and policies for those areas of the city where more detailed directions for land use, infrastructure, transportation, environment, urban design or similar matters are required beyond the general framework provided by the Official Plan.

Where decisions regarding the protection and enhancement of natural assets are most commonly made. The site plan/development review process is often too late.

Zoning Bylaws

Zoning bylaws implement the Official Plan by setting specific rules for land use, building types, densities, and setbacks.

Development Review

Where detailed site plans and plans of subdivision are approved.

Subwatershed Plans
Inform site-specific plans

Council Action 11

Approve and defend Official Plan updates related to natural assets.

Rationale

- **Policy Alignment:** Including NAM approaches in Official Plans strengthens policy direction and enhances support in subsequent planning stages.
- **Scalability and Growth:** NAM is adaptable and scalable, allowing municipalities to incorporate additional assets and services over time, thereby increasing the benefits provided by nature. Including natural assets in official plans helps by formalizing their recognition and importance within the municipality's growth and development approach.
- **Implementation Support:** Official Plans require zoning and other policy support to be effectively implemented, helping natural asset management strategies translate into actionable and enforceable outcomes.

Examples

Examples of progressive directions for natural assets in Official Plans:

- Include woodland edges and old growth trees in woodland definitions.
- Specify that natural areas within natural heritage and Greenbelt land will remain naturalized and will not be converted to manicured parks or recreational facilities.
- Incorporate a standard step into the development review process to facilitate the conveyance of lands designated as natural areas, open spaces, and hazard lands into public ownership.
- Include ecological connectivity and defined greenland systems as defined natural areas for protection.
- Designate and protect Environmentally Significant Areas (ESAs) and locally significant woodlands and wetlands in addition to Provincially Significant Areas.

For example:

The City of Brampton's Official Plan defines and places development restrictions on locally significant woodlands, which include any woodland that supports 10 or more old growth trees (greater than or equal to 100 years old). They also include "Woodland Edge" in the definition of woodland. This inclusion helps protect adjacent areas to a woodland containing at least 25% cover of native and/or non-native shrubs or trees.

The City of Markham's Official Plan includes strong directions for the conveyance of lands identified as part of their Natural Heritage Network.

Council Action 11

Continued from previous page

Figure 7 Excerpt from City of Markham Official Plan

3.1.2.4 To seek conveyance of lands within the Natural Heritage Network to a public authority, where appropriate, as part of the development approval process at a minimal or no cost to the receiving public authority. Conveyance of lands within the Natural Heritage Network shall not be considered as contributing towards the parkland dedication.



Council Action 12

When zoning bylaws are updated, request an overview of how Official Plan policies that support natural asset management have been integrated into the updates.

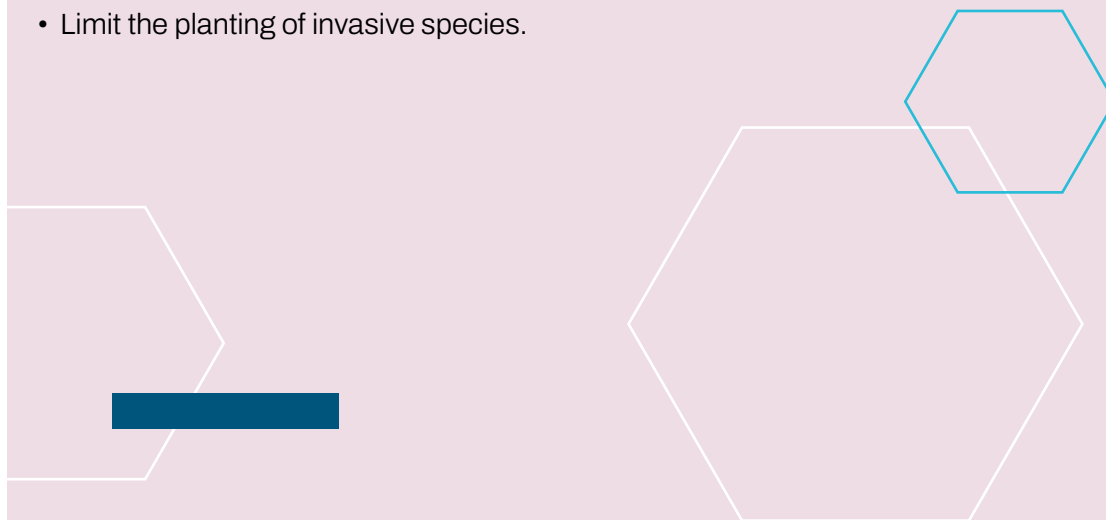
Rationale

- **Role of Zoning Bylaws:** Zoning bylaws are crucial in translating Official Plan policies into action. They dictate what developers can build, where they can build, and the allowable height and size of buildings. By establishing zones with specific permitted uses, zoning bylaws guide development.
- **Strengthen Implementation:** Many municipalities in Ontario have Official Plan policies that support natural assets, building on the long history of natural heritage systems in the province. However, these plans are often not effectively implemented, limiting the long-term protection and enhancement of natural areas. Official Plan policies related to natural assets must be reflected in zoning bylaws to ensure effective implementation. This alignment enhances municipalities' ability to manage growth sustainably and protect natural assets, ultimately strengthening community resilience and quality of life.

Examples

Some examples of zoning bylaw updates that integrate natural assets:

- Require that new developments and re-developments preserve and integrate existing natural systems
- Set land cover guidance by zone that sets natural asset area targets or maximum impermeable surface areas.
- Prohibit development that would negatively impact areas that are environmentally significant (e.g., wetlands, woodlands, shorelines, and significant natural corridors).
- Allow for alternative setback for the preservation of mature trees.
- Introduce mandatory soil volumes for different zones.
- Limit the planting of invasive species.



Council Action 13

Ask staff whether any existing bylaws and/or standards can be leveraged to include protection or enhancement of natural assets.

Rationale

- **Efficient and Cost Effective:** Leveraging existing bylaws and standards to integrate natural assets protection and enhancement is a more efficient and cost-effective approach than creating new bylaws, as it uses frameworks that are already in place.
- **Alignment with Environmental Goals:** This approach can help align environmental goals with ongoing land use and development approaches, incorporating natural assets into routine decision-making and planning activities.
- **Support for Enforcement and Compliance:** Allocating funding to uphold and enforce existing bylaws is critical for ensuring that bylaws designed to protect natural assets are properly implemented. Adequate funding supports the necessary resources for enforcement, monitoring, and compliance checks.

Examples

Some examples of how existing bylaws could be updated:

- Stormwater Charges Bylaw: Investigate options for trees and other natural assets to be eligible for credit in stormwater charge credit programs.
- Green Development Standards:
 - Update Green Development Standards to include low impact development (LID), natural asset restoration/protection, and groundwater protection.
 - Turn the updated Green Development Standards into a Green Development Bylaw.
 - If not a bylaw, incorporate some elements of the standards into zoning bylaws.
- Development Cost Charges (DCC) Bylaw:
 - Clearly identify natural assets as part of the infrastructure eligible for funding through development charges.
 - Offer reduced fees or credits to incentivize developments that protect or integrate natural assets.
 - Include natural asset projects in the mandatory DCC Background Study, ensuring they are explicitly identified as infrastructure needed to support growth.
- Allocate funding to uphold and enforce existing bylaws.

Council Action 14

Direct staff to conduct a review of existing municipal bylaws in neighbouring jurisdictions and identify gaps where new natural asset-specific bylaws could strengthen protections.

Rationale

- **Proven Effectiveness and Risk Reduction:** Implementing bylaws and standards that have been successfully used in other municipalities allows council to build on established best practices. This approach reduces risks associated with untested measures, speeds up implementation, and can help minimize the potential costs of developing new regulations.

Examples

Below are several examples of bylaws that can be implemented to protect and manage natural assets within a municipality:

- Private Tree Bylaws. If one already exists, consider requiring payment should a tree be removed and not replanted.
- Woodland, wetland, or natural feature protection bylaws.
- Green Street Standards.
- Allow natural assets (including tall species of native plants) to be added to the landscape on private properties, as current height restrictions in some municipalities limit their planting.
- Yard bylaw prohibiting invasive plants.



Council Action 15

Direct staff to use watershed planning to identify priority natural assets for protection and restoration (on private and public land), and suggest they collaborate with relevant Conservation Authorities (where available).

Rationale

- **Provincial Requirements:** The new Provincial Planning Statement (PPS 2024) requires large or expanding municipalities to prepare watershed plans. For small municipalities it is recommended. Watershed and subwatershed plans are useful for identifying natural assets that require prioritized protection and restoration based on analysis that considers the health of ecosystems at a regional and watershed scale.
- **Need for Collaboration:** Asset management planning traditionally focuses on customer-based services and infrastructure needs, rather than ecological-based management. Natural asset restoration is often framed around human needs and risk management, rather than ecosystem integrity. In contrast, watershed plans are more focused on ecological health. Both perspectives are important for NAM and collaboration between asset management and watershed planning is important because it can lead to more resilient infrastructure, healthy communities, and better long-term planning that integrates both human and ecological needs.
- **Conservation Authorities:** Ideally, watershed plans should be led by a conservation authority. If a consultant leads the process, it is essential to supplement their work with additional analysis from municipal and conservation authority staff to ensure the plans are comprehensive and tailored to local needs and priorities. The PPS encourages municipalities to collaborate with applicable Conservation Authorities on watershed planning.

Example

The Carruthers Creek Watershed Plan identified priority restoration areas within its watershed (located in Durham Region). The Town of Ajax, in partnership with the Region of Durham, Ducks Unlimited Canada, and Toronto and Region Conservation Authority, used the watershed plan to support funding application for the Kerrison Wetland Restoration Project, an area identified in the plan. The restoration project created and expanded marsh and swamp wetland habitat and decommissioned two old farm ponds and their associated infrastructure. The project was completed in 2023.

Council Action 16

Direct staff to ensure collaboration between the parks and stormwater management departments to consider how stormwater management is integrated into parkland acquisition proposals brought forward to council.

Rationale

- **Optimizing Land Use and Maximizing Value:** Increasing collaboration between parks and stormwater management staff allows municipalities to leverage existing park areas and parkland acquisition initiatives to identify opportunities for enhancing stormwater benefits through natural assets. By focusing on multi-functional land acquisition, municipalities can create green spaces that serve both environmental and community needs, maximizing the value of new parkland.
- **Cost Savings and Efficiency:** Strengthening collaboration between parks and stormwater management can lead to cost savings. Integrating stormwater solutions into parkland development can help reduce the need for separate infrastructure investments by combining recreational, hydrological, and ecological functions within a single space.

Example

Corktown Commons Park in Toronto integrated a constructed **marsh/wetland** as part of the park's onsite ecological stormwater management system, receiving and treating runoff from the western side of the park. The park is also created on top of a flood protection landform, protecting nearby development from potential Don River flooding. The river side of the park is an urban **prairie** designed to meet regulations that restrict active recreation on the river side during flood conditions.



Photo: City of Toronto

Council Action 17

When presented with a municipal “climate change lens” framework, ask staff to outline how natural asset and biodiversity considerations have been integrated.

Rationale

- **Enhancing Resilience and Reducing Costs:** A climate lens is a tool used by municipalities to evaluate the climate impacts and resilience of policies, programs, and decisions. Integrating natural assets into this framework is important, as these assets play a key role in climate change mitigation and adaptation. Natural assets, such as wetlands and forests strengthen resilience and adaptability by reducing risks from extreme weather events.
- **Biodiversity and Climate Change:** Biodiversity loss and climate change are interconnected, as the destruction of ecosystems weakens their ability to adapt to climate impacts and capture carbon, while climate change accelerates habitat destruction, creating a reinforcing feedback loop.
- **Addressing Climate Risks, Biodiversity, and Carbon:** Natural assets should be explicitly incorporated into a municipality’s climate lens to ensure decisions align with climate goals and biodiversity protection. This includes evaluating the climate implications of decisions that impact natural areas. Additionally, natural systems play a critical role in carbon capture, helping municipalities meet carbon reduction targets while enhancing climate resilience. Protecting and enhancing these assets not only supports biodiversity but also contributes to global climate change mitigation efforts.

Example

Natural assets can be integrated into municipal climate lenses by adding a question such as “will doing X to this natural area impact the risk of climate change impacts?”.



Crosscutting Recommendations

This section details crosscutting actions that aim to help create stronger connections between all the plans, policies, and bylaws detailed thus far. Stronger integration could enhance the effectiveness of NAM. These actions aim to address gaps, streamline efforts, and leverage overlaps, helping municipalities take a more coordinated approach to NAM.



Photo: Sarah Dopp

Council Action 18

- Through the budget process, ask staff whether current investments in natural asset management are sufficient.
- When presented a business case analysis with respect to an infrastructure decision, ask how ecosystem services have been considered in the analysis.

Rationale

- **Dedicated Budgeting:** A dedicated budget helps prioritize natural assets alongside other infrastructure, improving transparency, accountability, and effective management within the municipal budget framework.
- **Carbon Budgets:** As carbon budgets are developed, include natural assets by considering their storage benefits and accounting for emissions from their degradation.
- **Ecosystem Service Valuations in Decision-Making:** Ecosystem service valuations help shift perspectives, recognizing natural areas as valuable assets that provide ecological, social, and economic benefits and services rather than simply undeveloped land. By including these valuations in financial analyses, decision-makers can better understand the costs of losing or degrading natural assets.

Examples

Cost-Benefit Analyses:

When evaluating development or infrastructure projects, municipalities can include ecosystem service valuations in cost-benefit analyses to strengthen the case for protecting natural assets. For instance, including the value of flood mitigation provided by wetlands can highlight the long-term benefits of preserving these areas over opting for more expensive engineered solutions.

Analyzing Land Use Changes:

Ecosystem service valuations can be used to assess specific land use changes, such as urban expansion or zoning amendments. For example, when considering the conversion of agricultural land to urban development, the valuation of ecosystem services like carbon sequestration, water filtration, and biodiversity preservation can help municipalities weigh the trade-offs and make more informed, balanced decisions.

Council Action 19

Request a staff report to council on whether a reserve fund has been set up that explicitly includes or enables funding for natural assets.

Rationale

- **Reserve Funding for Natural Assets:** Reserves are funding set aside to pay for future capital projects and unexpected operating expenses such as extreme weather events. Asset management processes can be leveraged to advocate for reserve funding for natural assets, helping ensure lifecycle costs are fully accounted for and supported by reserve funding.
- **Uninsured events:** Reserve funding for natural assets can be valuable for helping regain or sustain services following an uninsured event, for example a major wildfire destroying a forest.

Example

The City of London has established a reserve fund for each service area in their asset management plan. Since natural assets are included in the forestry and stormwater management service areas, they receive funding when resources are allocated across all service areas.



Council Action 20

When an asset management plan is presented, ask how climate risk was incorporated.

Rationale

- **Prioritize Vulnerable Natural Assets:** Incorporating climate vulnerability into asset risk assessments can help prioritize interventions on assets that are both high-risk and highly vulnerable to climate impacts.
- **Plan for Resilience:** Asset management processes can also help staff plan for the long-term resilience of natural assets, accounting for both gradual climate changes and extreme events.
- **Infrastructure Planning and Budgeting:** By embedding climate considerations into asset management frameworks, municipalities can link the financial and service-related benefits of climate actions to broader infrastructure planning and budgeting, ensuring that these actions are prioritized and defended within the budget process.

Example

Aligning climate change vulnerability assessments and asset management risk assessments for natural assets can be achieved through the following actions:

- Add a climate vulnerability score to traditional risk factors (e.g., likelihood and consequence of failure). Then use a combined scoring system that ranks natural assets (and all assets) by both climate vulnerability and other asset management risks.
- Update asset management risk assessments and climate change vulnerability assessments on the same schedule; this can lead to technical staff efficiencies (e.g., combined workshop) and can be timed around the availability of updated climate modeling.
- Ensure that climate risk or vulnerability assessments are factored into the entire lifecycle of natural assets.
- Incorporate risk scenarios into financial modeling.



Council Action 21

When any plan that includes natural assets is presented to council ask staff if they have requested the raw data associated with the plan.

Rationale

- **Start or Enhance an Inventory:** Existing data can be used to begin or complement a natural asset inventory. While the focus for asset management should be on public land, a broader inventory that includes natural assets on private land can also provide valuable insights for planning, zoning, and bylaw practices, thereby informing broader policy development.
- **Municipal Data Systems:** Updates to all scales of planning document, such as official plans, master plans, secondary plans, and subdivision plans, provide valuable opportunities to gather information on natural assets. Data for these assessments is often collected by consultants, and it may not always be integrated into municipal datasets. Ensure that all data from consulting work is obtained and merged into corporate data systems to maximize its utility.
- **Reduce Costs:** By leveraging data collected or updated during the development of various plans, municipalities can continuously enhance their natural asset inventory. This approach avoids redundancy, reduces costs, and builds on existing knowledge, creating a more efficient and informed system.

Examples

City of Markham collected natural asset (ecological land classification) information through their Official Plan review. They used this data to start their natural asset management inventory.

Some municipalities have a tree inventory through their urban forest management plans: these can be simple to integrate into a natural asset inventory.

Council Action 22

When master plans are presented, ask how their priority actions are reflected in the corporate asset management plan.

Rationale

- **Alignment and Transparency:** Directly linking master and management plans with asset management will boost confidence in any recommendations and increase transparency in analysis methodology. These connections will help all related plans work together effectively, reducing redundancies and inconsistencies.
- **Line of Sight:** This process improves visibility within the municipality by establishing a direct connection from organizational objectives to asset performance, which supports more informed decision-making.

Example

Master and management plans can be directly linked with asset management planning by:

- Including natural asset inventory and condition assessment (aligned with asset management processes) as priority action item in a related management plan (e.g., urban forest management plan, invasive species management plan).
- Ensuring levels of service are consistent across plans, and goals and objectives in master and management plans can often be reframed as levels of service.
- Acknowledging that management actions in management plans are lifecycle management activities within asset management. These activities should be linked, with the asset management plan providing a high-level overview and the management plan offering more detailed directions.

From a process perspective, linking can be accomplished by:

- Including an asset management team member as a stakeholder in the development of master or management plans.
- Including a table in asset management lifecycle analysis that documents recommendations, linking them to the relevant asset lifecycle phase (e.g., planning, maintenance, renewal) and citing the source (e.g., Stormwater Master Plan).

Council Action 23

Request and approve natural asset projects within federal and provincial infrastructure funding submissions.

Rationale

- **Cost-Effective Infrastructure:** Natural asset projects can provide essential services like stormwater control and urban heat mitigation at lower costs than traditional infrastructure, and they can be important complements to traditional infrastructure projects that help improve infrastructure resilience.
- **Leadership:** Including natural asset projects in funding submissions demonstrates municipal leadership in sustainable infrastructure and climate resilience, setting an example for innovative, forward-thinking solutions that align with federal and provincial priorities.

Example

Major funding asks for infrastructure funding programs can include natural asset projects. It can be helpful to consider the benefits of some natural assets priority project areas. For example, the Federal Disaster Mitigation Adaptation Fund (DMAF) funded a series of natural asset projects for the City of Toronto and Toronto and Region Conservation Authority.



Photo: TRCA

Council Action 24

Request a report from staff outlining their invasive species management approaches and costs.

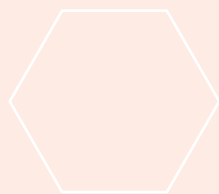
Rationale

- **Interconnection:** Natural asset condition and invasive species are closely interconnected, as the health and function of natural assets can be significantly impacted by the presence of invasive species.
- **Invasive Species Management Costs:** Maintenance is important for forest assets in urban or urbanizing areas, yet invasive species management costs are often not line items in municipal budgets. Integrating these costs into an existing framework, such as an asset management plan, will help make invasive species management a more active part of the budgeting process. As the costs of managing invasive species rise rapidly for municipalities, this integration becomes increasingly essential.
- **Criticality:** In asset management, the concept of criticality helps determine which assets are most essential to maintain, protect, or prioritize for funding and resources. Given the high costs and unpredictable results associated with invasive species control, it is often necessary to prioritize natural assets for management. Not every natural asset can realistically be protected from invasives, and using criticality analysis within asset management could help inform some of these decisions.

Example

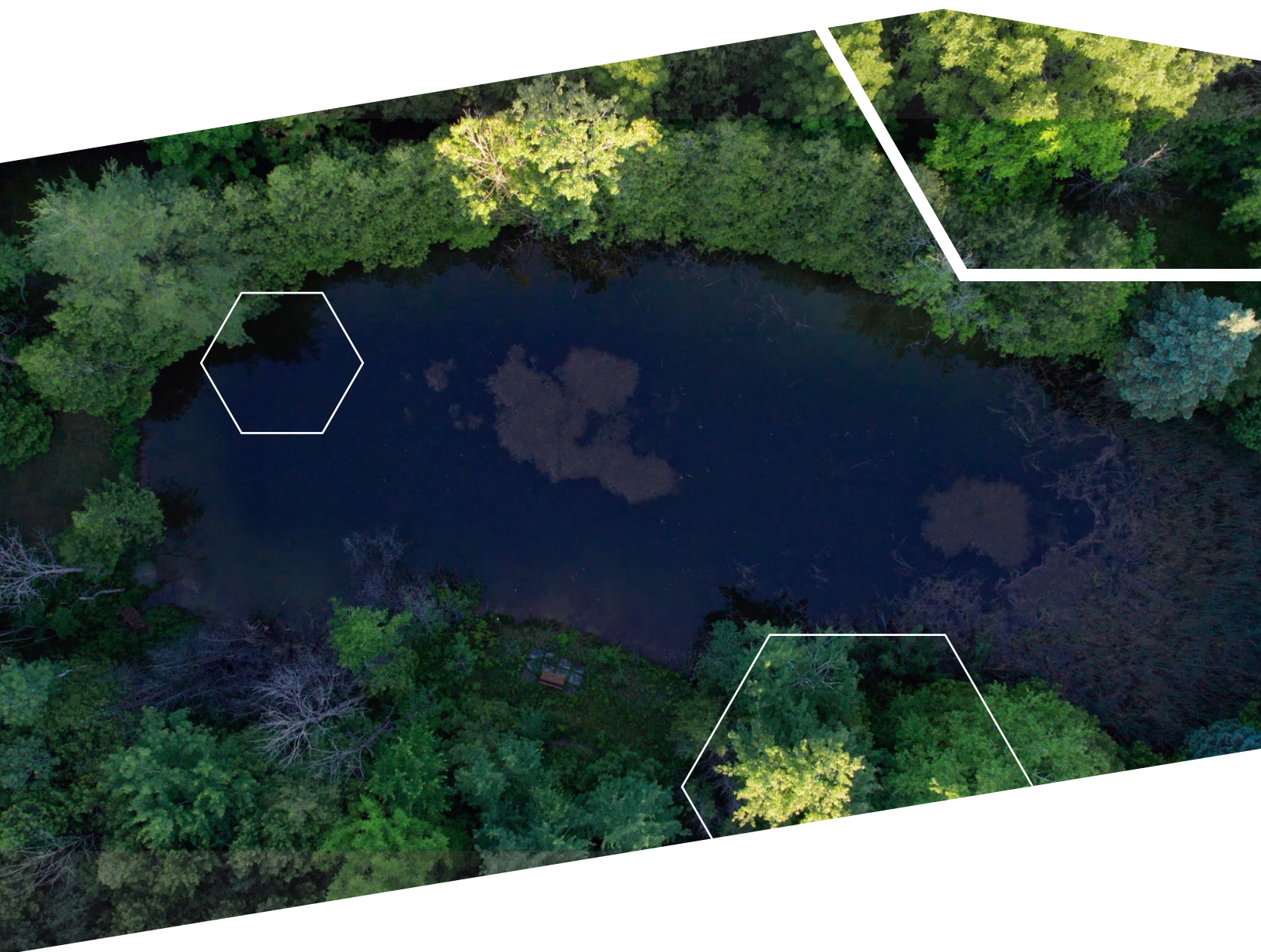
Development of an invasive species strategy aligned with asset management processes can be useful. For example:

- Develop an asset management level of service focused on invasive species and use asset management to make the business case for the work needed.
- Integrate invasive species considerations into asset management risk. Investigate whether this process can help inform decisions on what to tackle first, how to prioritize.



Conclusion

This report outlines practical policies and recommendations to advance NAM within communities across Ontario. By effectively integrating natural assets into asset management processes, municipalities can ensure that these important assets are recognized, protected, and maintained alongside traditional infrastructure. The twenty-four recommended council actions also provide a pathway for councillors and municipalities to incorporate natural assets into their planning, budgeting, and decision-making processes, facilitating the long-term protection and restoration of nature. Successful implementation of these strategies will require strong leadership and collaboration across departments, but the potential benefits—social, ecological, and economic—are significant. Municipalities that prioritize natural asset management today will be better equipped to meet future challenges and provide enduring benefits to their communities.





Possibility grows here.

