



CITY OF PORT MOODY

NATURAL ASSET MANAGEMENT STRATEGY

FEBRUARY 20, 2024

AGENDA

1. What is Natural Asset Management and why do it?
2. What is the City's approach to Natural Asset Management?
3. What is the value of the Municipal Services that are provided by Natural Assets?
4. What do we do next?

WHAT IS NATURAL ASSET MANAGEMENT?

WHAT ARE NATURAL ASSETS?

NATURE-BASED SOLUTIONS

Natural Assets

- Forests
- Wetlands
- Coasts
- Soil
- Air
- Water
- Lakes, rivers, creeks
- Fields & grasslands

Restored Assets

- Reforestation & afforestation
- Restored wetlands
- Daylighted streams & rivers
- Rewilded cultivated lands

Hybrid Assets

- Naturalized shorelines
- Urban parks
- Stormwater ponds & reservoirs
- Bioswales
- Pollinator gardens
- Street trees

Engineered Assets

- Cisterns
- Rain barrels
- Infiltration trenches
- Permeable pavements
- Perforated pipes

WHAT IS NATURAL ASSET MANAGEMENT (NAM)?

- The City's approach to NAM has been designed to integrate with, and build upon, existing AM processes
- NAM is a core component of the overall asset management and service delivery process
 - Assess natural assets, their condition, costs, and risks to service delivery
 - Assess NAM practices
 - Develop management plans and strategies
 - Integrate information into LTFP, land use planning, master planning, etc.
 - Measure, report, communicate
- Considered a best practice and expectation for the Professional Engineering industry



WHAT IS NATURAL ASSET MANAGEMENT (NAM)?

What NAM is...	What NAM is <u>NOT</u> ...
<ul style="list-style-type: none">• A process of protecting, enhancing, and maintaining natural assets• A way of including natural assets into complex decision-making processes about municipal service delivery• A continuous improvement process• A multi-disciplinary practice that involves tools, processes, and practices from many different departments	<ul style="list-style-type: none">• A “one and done” project• A conservation or protection plan• A separate or silo-ed process• One person’s job

WHY CONSIDER NATURAL ASSETS IN SERVICE DELIVERY?

When effectively monitored, maintained, and rehabilitated, natural assets ...

- Provide vital services equivalent to those from many engineered assets, and often many co-benefits
- Help service providers contain any infrastructure deficit/funding gap through lower lifecycle costs
- Improve service resiliency and adaptability to climate change
- Provide service and add value for decades in ways that many engineered assets cannot match

COMPARISON: BUILT V. NATURAL ASSETS

	Built Assets	Natural Assets
Asset ownership and responsibilities	Can be clearly defined, even if assets/services span	Cannot be easily defined
Services provided	Well-defined, typically narrow in scope	Broad in scope, often many co-benefits
Level of service provided	Predictable based on design	Highly contextual, many inter-relationships/functions at play
Value of service	Easily quantified	Many approaches to valuating
Customers/beneficiaries	Easily defined	Not easily defined because benefits/services are not
Overall service delivery and asset management process	Complicated	Complex
State of industry best practices	Generally well established, some areas still evolving	Emerging / evolving



**WHAT IS THE CITY'S APPROACH TO NATURAL
ASSET MANAGEMENT?**

CONTEXT AND SCOPE

- The City began the NAM Policy and NAM Strategy initiative in 2022 in alignment with Council's Strategic Planning goals
- The process has involved broad cross-functional collaboration with the NAM Working Group and the Action on Climate Team (ACT)
- The focus of the NAM Policy and NAM Strategy is on:
 - Natural assets within the City of Port Moody's jurisdiction
 - Municipal services provided by natural assets (not the natural assets themselves)

THE CITY'S APPROACH TO NAM

- **NAM Policy**

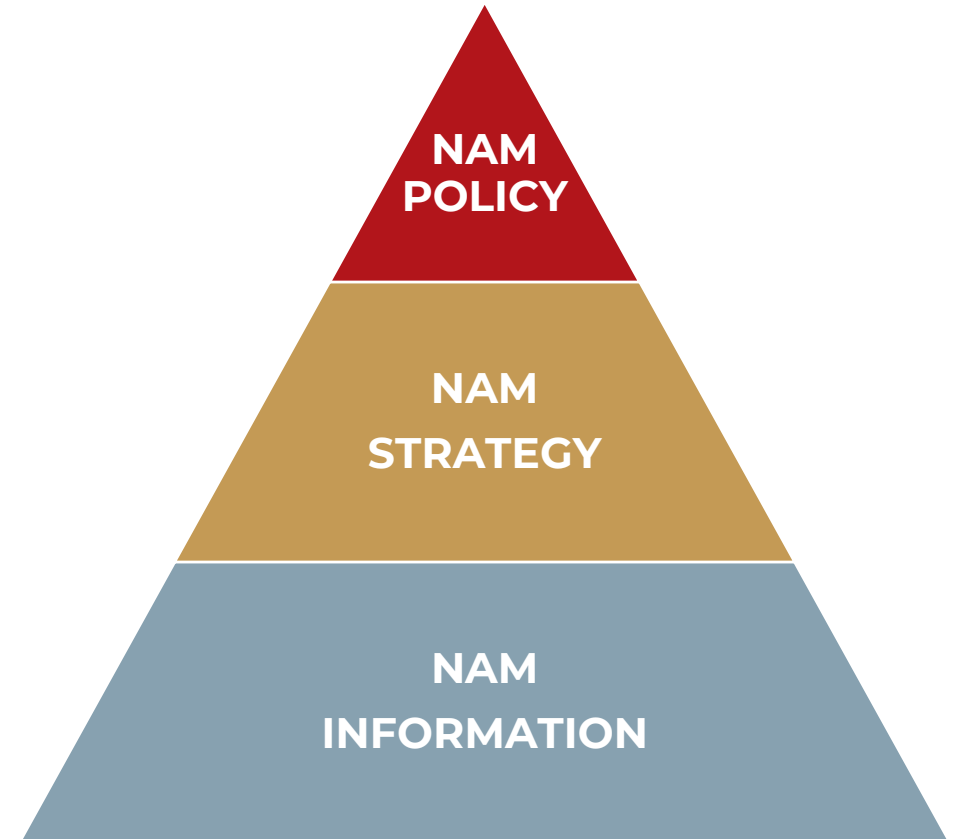
- Establishes the objectives the City is working to achieve through NAM

- **NAM Strategy**

- Identifies the approach the City will take to achieve the objectives

- **NAM Information**

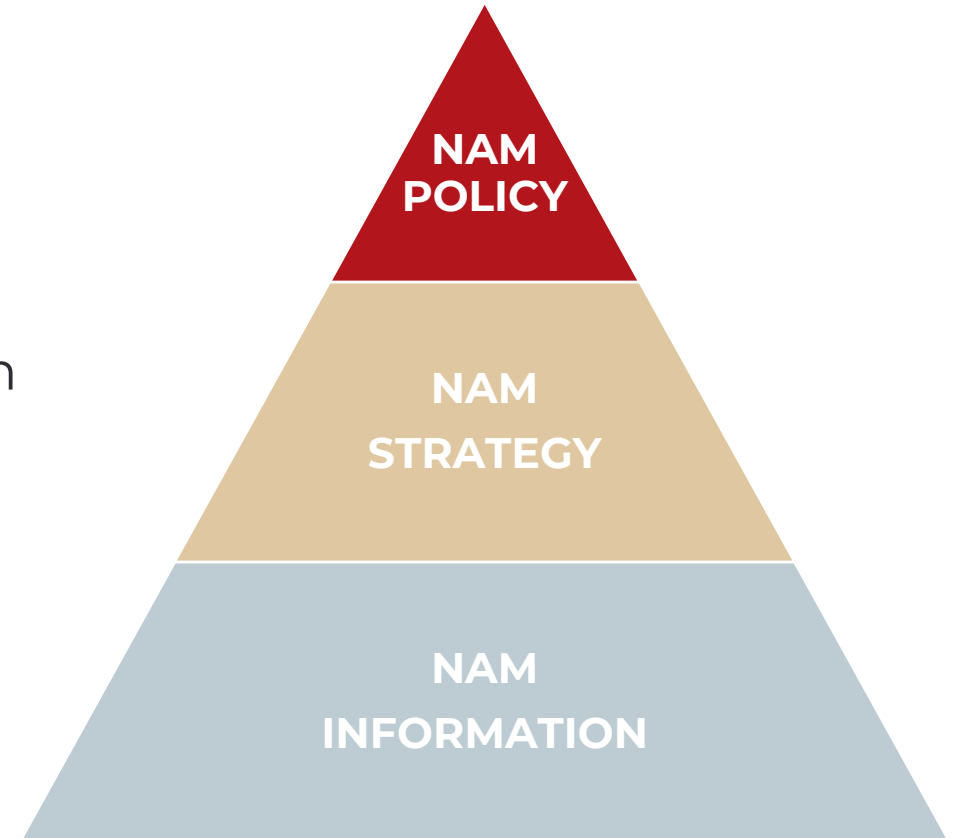
- Identifies the natural assets within the City's jurisdiction, the municipal services they provide, and the risks to these assets and services



THE CITY'S NAM POLICY

Purpose:

- Guides the development and implementation of NAM processes, practices, and systems
- Implementation of NAM will improve the City's ability to monitor, protect, enhance, and maintain natural assets for:
 - sustainable service delivery;
 - the reduction of GHGs; and
 - improved resilience to climate change, quality of life, biodiversity, and health and resilience of ecological processes.



THE CITY'S NAM POLICY

Objectives:

1. To ensure that natural assets are prioritized in **decision-making** processes, policy development, infrastructure planning, land use planning, social planning, and development planning.
2. To develop and maintain **reliable information** about natural assets within the City's jurisdiction and the municipal services they provide to inform planning, decision-making, risk management, and communication with other jurisdictions, partners, landowners, and the public.
3. To identify and secure the **financial and human resources** required for NAM to support sustainable service delivery.
4. To **build knowledge and capacity** of staff, Council, and the public around NAM.

THE CITY'S NAM POLICY

Principles:

1. The City's asset management (AM) systems and processes are the foundation for NAM. Natural assets will be integrated into AM processes and AM processes will be updated to achieve NAM objectives.
2. NAM is one part of the City's broader approach to advancing cohesive and systemic nature-based solutions.
3. The City will emphasize the management of natural assets based on the health and resilience of ecological processes and the services the natural assets provide, amidst competing priorities.

THE CITY'S NAM POLICY

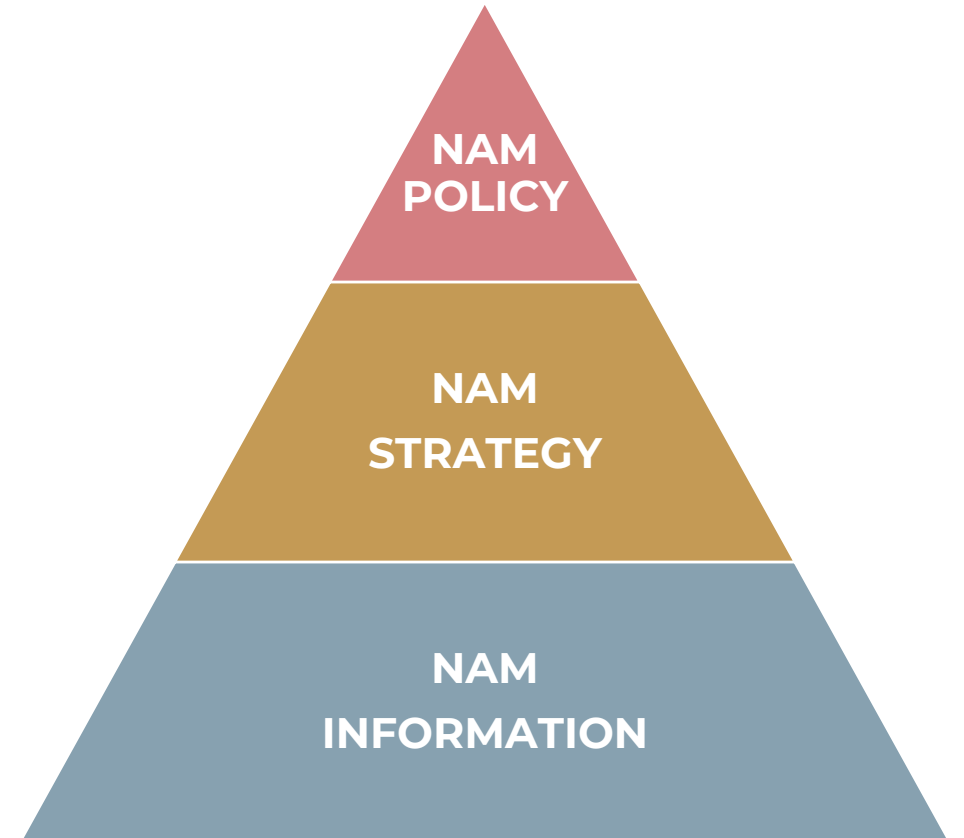
Principles:

4. The City considers the significant co-benefits provided by natural assets at early stages of planning and decision-making processes and seeks to optimize these benefits.
5. The City will estimate the financial value of the ecosystem services provided by natural assets to the City's municipal services. This does not include valuation of the natural assets themselves.
6. The City will collaborate with other jurisdictions and partners to support the management of natural assets that contributes to ecological processes and ecosystem services in the City but are outside of the City's jurisdiction.
7. The City strives to follow best practices in NAM and will update strategy and processes as best practices evolve in compliance with applicable environmental regulations.

THE CITY'S NAM STRATEGY

Purpose:

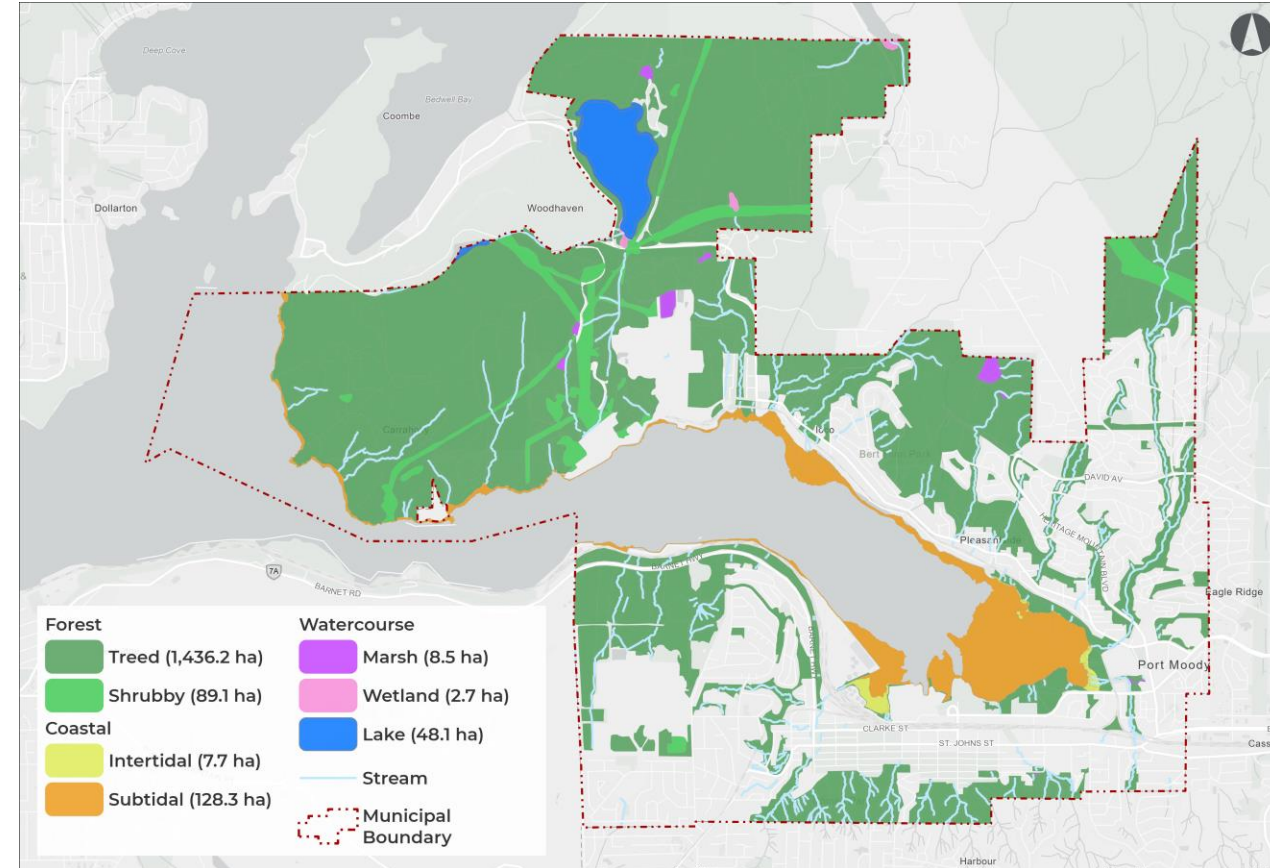
- Identify the approaches that the City will take to implement the NAM Policy and build momentum for NAM practices at the City
- Includes the natural asset inventory and valuation of services
 - Provide Council and staff with information on the quantity and value of natural assets within the City, the role of natural assets in municipal service delivery, and why NAM is critical for the community.



**WHAT IS THE VALUE OF THE MUNICIPAL SERVICES
THAT ARE PROVIDED BY NATURAL ASSETS?**

WHAT MUNICIPAL SERVICES ARE PROVIDED BY NATURAL ASSETS?

Asset	Services Provided
Forests	<ul style="list-style-type: none"> • Erosion Prevention • Carbon Storage • Rainwater Detention (<i>runoff rate control</i>) • Rainwater Quality Treatment • Rainwater Retention (<i>runoff volume control</i>)
Wetlands	<ul style="list-style-type: none"> • Rainwater Detention • Rainwater Quality Treatment • Rainwater Retention
Lake	<ul style="list-style-type: none"> • Rainwater Detention • Rainwater Retention
Watercourse	<ul style="list-style-type: none"> • Rainwater Conveyance



Port Moody Natural Asset Map

WHAT IS THE VALUE OF THOSE MUNICIPAL SERVICES?

METHODOLOGY

- 1. Replacement cost:** what would it cost to provide the same level of service with built infrastructure if the natural asset no longer exists?

Limitations – there is a potential to undervalue services as it does not account for the broader ecosystem services offered by natural assets, nor the full lifecycle cost of an asset, solely the capital cost of replacement infrastructure

- 2. Value transfer:** what are published values that may be appropriate to use here?

Used to estimate the economic worth of air purification, carbon sequestration, and carbon storage for forests based on findings from the Urban Forest Management Strategy (UFMS)

WHAT IS THE VALUE OF THOSE MUNICIPAL SERVICES?

Natural Asset Class	Natural Asset	Services	Value
Forest	Treed	Erosion Prevention Carbon Storage Rainwater Detention (runoff rate control) Rainwater Quality Treatment Rainwater Retention (runoff volume control)	\$194.59 M
	Shrubby	Erosion Prevention Rainwater Detention (runoff rate control) Rainwater Quality Treatment Rainwater Retention (runoff volume control).	\$4.7 M
Wetlands	Open Water	Rainwater Detention (runoff rate control) Rainwater Quality Treatment Rainwater Retention (runoff volume control)	\$1.13 M
	Marsh	Rainwater Detention (runoff rate control) Rainwater Quality Treatment Rainwater Retention (runoff volume control)	\$4.36 M
Lake	Lake	Rainwater Detention (runoff rate control) Rainwater Retention (runoff volume control)	\$30.17 M
Watercourse	Stream*	Rainwater Conveyance	\$141.61 M
Grand Total			\$376.56 M

RISKS TO SERVICE DELIVERY

There are numerous risks to the sustainable delivery of the services provided by natural assets, most particularly:

- 1. Land conversion/development:** The expansion of urban areas and infrastructure development can lead to disruption of ecosystems and the services they provide, alongside habitat destruction and loss of biodiversity. Understanding the potential impacts to natural assets supports considering them alongside other priorities when making decisions.
- 2. Climate Change:** Climate change poses a broad and pervasive risk, impacting natural assets in various ways, including altering temperature patterns, precipitation, and overall ecosystem dynamics. These changes are expected to increase the frequency and severity of drought, pests and disease, forest fires, floods, and landslides.

WHAT DO WE DO NEXT?

NAM STRATEGY PRINCIPLES

- **Simplicity:** Complexities are best navigated through simple, flexible, and collaborative processes that involve the right people with the right knowledge, and that build on existing organizational systems where possible.
- **Collaboration:** Equipping the right people with the right information and creating a structure for collaboration to understand trade-offs is a critical pathway for success.
- **Documentation:** Documenting decisions and rationale will help to build NAM practices over time and continuously improve practices with each iteration.
- **Continuous Improvement:** NAM practices and information will improve over time as data is used, processes are tested, and challenges and successes are identified.

NAM POLICY OBJECTIVES - RECAP








NAM Policy Objectives:





1. To ensure that natural assets are prioritized in **decision-making** processes, policy development, infrastructure planning, land use planning, social planning, and development planning.
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3. To identify and secure the **financial and human resources** required for NAM to support sustainable service delivery.
4. To **build knowledge and capacity** of staff, Council, and the public around NAM.

NAM STRATEGIC ACTIONS

- Strategic actions will enable the City to achieve the NAM Policy objectives
- Actions were selected based on their impact on advancing sustainable service delivery goals
- They are categorized into short- (1 year), medium- (2-5 years), and long-term (5+ years) actions

SHORT TERM ACTIONS (1 YEAR)

- Maintain the cross-departmental working group 
- Identify roles and responsibilities for implementing the NAM Strategy 
- Centralize data and information 
- Improve implementation of ISMP recommendations 
- Integrate natural asset information into the City's financial planning processes 
- Communicate the NAM policy and strategy with staff and council 
- Continue relationship and support with SFU ACT 

-  Decision Making
-  Reliable Information
-  Human & Financial Resources
-  Building Capacity

MEDIUM TERM ACTIONS (2 TO 5 YEARS)

- Identify specific natural assets that are at risk of loss or damage 
 - Pilot improvements to the collection and management of data on natural assets 
 - Integrate natural assets in capital planning processes 
 - Integrate natural assets in development planning processes 
 - Adapt/develop tools to integrate natural asset considerations into decision-making 
 - Develop a communication strategy 
 - Report on natural asset data and monitoring to stakeholders 
-  Decision Making
 Reliable Information
 Human & Financial Resources
 Building Capacity

LONG TERM ACTIONS (5+ YEARS)

- Embed managing risks to natural assets into municipal processes
- Continue to build on partnerships and communication



- Decision Making
- Reliable Information
- Human & Financial Resources
- Building Capacity



THANK YOU

QUESTIONS AND DISCUSSION