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Municipal Natural Assets Initiative

MNAI.CA
Making Nature Count

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1 Why and how to progress to a full natural asset management project?

Congratulations on completing your natural asset inventory! Inventories are an essential first step in the full natural asset management project. They provide details on the types of natural assets a local government relies upon, some details of their condition, some risks they face, but not a sense of asset services or their values.

This *Now What? Guide to next steps* walks local governments through how to progress from your preliminary inventory to a full natural asset management project.

Table 1: *illustrates key differences between a preliminary inventory and a full natural asset management project.*

NATURAL ASSET MANAGEMENT STEP	PRELIMINARY INVENTORY	FULL NAM PROJECT WITH A MORE COMPREHENSIVE* INVENTORY
1 **Common understanding of natural asset management**	✓	✓
2 **Readiness assessment**	✓	✓
3 **Competency review**	✓	✓
4 **Scoping inventory needs**	✓	✓
5a **Data gathering and processing** (preliminary) Focus on existing, easy-to-obtain data, often from provincial datasets	✓	
5b **Data gathering and processing** (comprehensive) Seek out and utilize more localized or specialized datasets		✓
6a **Structuring your inventory** (preliminary) Default structure defined by MNAI	✓	
6b **Structuring your inventory** (comprehensive) Inventory structured to match community input		✓
7a **Condition assessment** (preliminary) Desktop exercise using a limited number of readily available, pre-established indicators	✓	
7b **Condition assessment** (comprehensive) Includes additional local data, expands number of indicators via discussion with community		✓
8a **Risk identification** (preliminary) High-level exercise that identifies risks to NAs and associated services, with a H-M-L ranking	✓	

	NATURAL ASSET MANAGEMENT STEP	PRELIMINARY INVENTORY	FULL NAM PROJECT WITH A MORE COMPREHENSIVE* INVENTORY
8b	**Risk identification** (comprehensive) Facilitated workshop to identify probability of impacts and magnitude of consequences to arrive at more nuanced rankings. Where possible, scope of impact(s) to NA incorporated into dashboard maps		✓
9	**Modelling of current conditions**		✓
10	**Economic valuation** (current status)		✓
11	**Scenario modelling**		✓
12	**Lifecycle costing**		✓
13	**Implementation: early indication of actions or analysis**		✓

*** PLEASE NOTE:** a comprehensive inventory can be further customized to meet the specific needs of a community.

Table 1: **Natural asset management steps**

2 Assumptions

What are municipal natural assets

For the purposes of this guide, it is assumed:

a/ The local government has asset management capacities and processes.

b/ The local government has access to substantial amounts of relevant data (e.g., land cover data).

c/ MNAI can provide modelling services beyond what the local government has capacity for.

The Municipal Natural Assets Initiative (MNAI) is a not-for-profit society that is changing the way municipalities deliver everyday services - increasing the quality and resilience of infrastructure at lower costs and reduced risk. The MNAI team provides scientific, economic and municipal expertise to support and guide 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.

3 Local government prerequisites

Success is as much about people as it is about the underlying available data. Therefore, municipal natural asset management projects can only be successful if local governments are engaged. This means there must be:

a/ corporation-wide support for the initiative, and

b/ staff engagement, typically the same personnel that are involved in standard asset management.

More specifically, MNAI requests local governments to:

a/ Demonstrate explicit written support (letter or resolution) from participating Council and/or the Chief Administrative Officer for the project, including for allocating additional staff capacity.

b/ Demonstrate clear commitment to a structured asset management approach across the organization.

c/ Commit to supporting the identification of data sources, providing data, and to fill in templates that MNAI provides.

d/ Commit to exploring changes to decision-making as a result of the project, including, for example, costed Operations and Maintenance plans.

e/ Commit the engagement of a multi-disciplinary staff team representing relevant departments such as Finance, Public Works, Planning, Engineering, and Parks. If the community already has an asset management committee, then the involvement of someone from this group is needed.

f/ Designate a project lead who will also be the primary focal point for MNAI.

g/ Participate in project evaluation interviews at the close of the project.

h/ Commit to follow-up exercises at 1, 2, and 3 years after the close of the project.

4 Elements of a full natural asset management project

4.1. Scoping and defining [discovery]

To move beyond a preliminary natural asset inventory, MNAI first needs scoping discussions with the local government to understand in more detail the natural assets and services of interest as well as the data and capacity the local government has available.

This step includes:

- Scoping and defining additional natural assets and/or services of interest
- Defining analytical and modelling needs
- Defining data/information needs, how to gather the data and how it would be used
- Reviewing preliminary inventory assessment and risk identification to determine any areas that require additional focus
- Reviewing / discussing which non-local government entities can or should be involved in the project (e.g., First Nations/Métis/Inuit, environmental/conservation organizations, land trusts, land owners, academic institutions, local experts, federal or provincial representatives, utilities)

MNAI will achieve this step primarily through conference calls with the local government.

Outputs: A draft project report that includes a scoping document for subsequent project phases.

4.2. Project engagement launch

A launch and technical workshop is an in-depth opportunity to:

- present, refine and validate the scoping document with relevant stakeholders and the MNAI technical team
- review results of the previously completed FCM readiness scale
- visit the project site and confirm assumptions
- confirm roles and responsibilities with the local government
- determine the role of non-local government entities

The workshop should typically include the local government as well as those who own and/or have jurisdiction over land and natural assets on which the local government relies.

The MNAI team includes the project lead, technical director, technical advisor, asset management advisor, and water resources engineer.

Outputs: Final project study roadmap and workplan with roles and responsibilities, and a clear understanding of services / natural assets that are within scope.

4.3. Filling essential knowledge gaps

It is essential to fill knowledge gaps before conducting any modelling to understand the relevance of a natural asset to particular services. For example, if a local government is interested in maintaining groundwater, it is important to first understand which assets are essential to ensuring a supply of ground water and to obtain the right data. MNAI will guide the local government in defining and acquiring the right data. This may include more localized or specialized datasets than were gathered and used during the preliminary inventory. The inventory will be structured to meet community input and priorities.

Outputs:

- Description of natural assets that are relevant to services that are of interest to local government (~1-2 pages)
- Overview assessment of the natural assets' contribution and assessment of their relative priority.

4.4. Modelling and economic assessment of current capacities, and expanded understanding of condition and risk

Depending on the foregoing assessment, MNAI would normally focus with the local government on a smaller number of priority services or assets of interest, undertake model refinement, delineate areas of focus and all other aspects of modelling.

The modelling is important to ensure there is rigorous data, not indicative data, that can be considered in an asset management context regarding current estimated levels of services.

Services that can be modelled include, for example:

- Surface water quality and quantity
- Flood prevention
- Urban heat reduction
- Carbon sequestration

In some cases it is desirable to maximize natural asset management benefits to species at risk and critical habitat.

Once the current capacity of the natural assets has been estimated, MNAI works with the local government to develop a lifecycle valuation of services currently provided by natural assets, normally using an avoided-cost method.

This phase may require a more in-depth condition and risk assessment than was done in the initial inventory project, for example:

- An expanded condition assessment may consider the additional local data and indicators and involve field analysis
- A risk identification workshop may be used to determine in more detail the probability of impacts and the magnitude of consequences to arrive at more nuanced rankings. Where possible, the scope of impact(s) to natural assets would be incorporated into dashboard maps

MNAI can provide varying degrees of support / guidance to undertake modelling or support the local government's efforts in modelling. This needs to be scoped in detail and affects cost.

Outputs:

- Modelling results
- Enhanced condition and risk assessments integrated into natural asset dashboard
- Economic analysis identifying the value of the natural assets' services
- Completed condition assessment and risk identification templates

4.5. Planning scenarios

This phase can model and answer diverse, real-world questions such as "what happens to the services provided by the forest if it is logged to the legal limit?" or "what happens to the services if the forest is restored"? or "what happens if riparian setbacks are doubled?"

MNAI calculates changes in both the levels of service and the value of the changes in service, while integrating climate change variables into these scenarios. The results ensure evidence-based decision-making and can help local governments determine the most effective management (or other) options to meet objectives defined earlier in the process.

Modelling is often used for priority scenarios to ensure rigorous results.

Outputs:

- Modelling results
- Valuations for modelled scenarios

BOX 1

Implementation example: levels of service

Levels of service (LOS) are a building block of asset management and one area in which MNAI can support local governments in the implementation phase. LOS define the expected performance of services and represent a commitment of a local government that informs asset management and financial plans. Levels of service is one of three legs of the "asset management stool" and is balanced with by the cost and risk legs. Defining levels of service links strategic objectives with technical and operational objectives of infrastructure and thus steers local governments towards sustainable service delivery. If a goal of a local government is to build low carbon resilience where actions seek to protect and enhance ecosystems while also reducing greenhouse gases, levels of service can be defined to prioritize actions to achieve that goal.

In the case of natural assets that provide multiple services, LOS can help local governments account for and manage relationships between natural assets and multiple service combinations. Local governments can approach this in different ways depending on their priorities (e.g., by building in LOS for natural assets in a natural areas management plan or green infrastructure strategy, or by building natural asset-related LOS into a stormwater management plan that centres specifically on natural assets' role in delivering stormwater services).

Depending on your local government's current priorities, defining LOS for natural assets in priority areas may be an important step to advance natural asset management in your community.

4.6. Implementation

Implementation is not a finite process, but rather an adaptive management cycle that lasts as long as the assets exist, which is ideally in perpetuity. Furthermore, it is highly dependent on location and context and thus it is difficult to generalize about the details of what this phase may entail.

MNAI's involvement in implementation can be divided into implementation during the project, and long-term / ongoing support.

- Implementation during the project period

  During the 18-24 month project period, MNAI will work with the local government to:

  - help initiate implementation options such as the linking of natural asset management objectives to specific, operational asset management plans or to land use, climate change and adaptation planning.

- identify priority rehabilitation projects and advise on resource mobilization.

Such actions can help ensure that all the information from the assessment and planning phases is put into practice. Depending on the local context, this phase may require efforts to secure stakeholder support and identify options/mechanisms for collaboration at a watershed scale.

- Implementation following the project period

Depending on the context and needs, MNAI may also be able to work with the local government in specific, agreed-upon advisory roles past the timeframe of the initial project.

- Ongoing monitoring

Project monitoring is essential to determine what is changing as a result of natural asset management, and to share learning. MNAI will, at a minimum, monitor for three years, which requires periodic check-ins with the local government.

4.7. Final reports and communication

MNAI produces a final report to document the process, typically after it has identified technical support options for implementation. MNAI can also provide some support for local government communications efforts, if needed.

5 Choosing a project focus

Full natural asset management projects are generally scoped to specific services, co-benefits and/or geographic areas that align with local government priorities. This helps ensure relevance. Factors such as corporate priorities (stormwater management, drinking water, low carbon resilience, land use planning) and risks that the inventory project identified can all guide areas of focus. Levels of service (see Box 1), in turn, is a way to define expectations from natural assets and measure progress over time.

6 Engagement of First Nations, Métis and Inuit

MNAI welcomes the opportunity to engage meaningfully and work collaboratively with First Nations, Inuit and Métis Nations in all projects. MNAI is also keen to share results and lessons learned from our collaborative efforts, where appropriate. Natural asset management can only benefit from their worldviews which include interconnectedness, balance and respect. The knowledge and perspectives shared in this process can enhance natural asset management and in so doing effectively support reconciliation and the implementation of the United Nations Declaration on the Rights of Indigenous Peoples.

7 Project costs & timeframes

Costs and timeframes can range from **$90,000 over 14-18 months** to approximately **$220,000 over 30-36 months**, depending on a range of variables.

8 Travel

Travel can be considered for the launch workshop and other components, subject to pandemic restrictions.